GROUNDWATER SAMPLING AND REMEDIAL SYSTEM QUARTERLY MONITORING REPORT (First QUARTER 2023)

GARVEY ELEVATOR OU1 FEDERAL SUPERFUND SITE TECHNICAL SUPPORT TASK ORDER HASTINGS, NEBRASKA

Prepared for:



United States Environmental Protection Agency Region 7 11201 Renner Boulevard Lenexa, Kansas 66219

Contract Number: 68HE-01-18-D0013 Task Order Number: 68HE-07-20-F0129

April 19, 2023

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ACRONYMS AND ABBREVIATIONS

AES Architect Engineer Services ASR Analytical Service Request below ground surface bgs **CPC** Clear Path Consultants COC Contaminants of Concern Carbon Tetrachloride CT

EPA U.S. Environmental Protection Agency

FSP Field Sampling Plan

ft feet

feet per day ft/day

groundwater extraction and treatment **GET**

gpm gallons per minute

Long-Term Response Action LTRA

MS/MSD matrix spike/matrix spike duplicate

Monitoring Well MW

Operations and Maintenance O&M

OU Operable Unit Order of Magnitude OoM **PCE** tetrachloroethene passive diffusion bags **PDBs**

PLC programmable logic controller

Quality Assurance QΑ

Quality Assurance Project Plan QAPP

QC Quality control

Remedial Investigation RΙ ROD Record of Decision RW Recovery Well soil vapor extraction SVE

TO Task Order TCE trichloroethene

micrograms per liter

μg/L μg/m³ micrograms per cubic meter VOCs volatile organic compounds



1.0 INTRODUCTION

ClearPath Consultants JV (CPC), has been tasked under Environmental Services and Operations Contract Number 68HE-01-18-D0013, Task Order Number 68HE-07-20-F0129, to provide Long-Term Response Action (LTRA) services to support U.S. Environmental Protection Agency (EPA) Region VII in remediation of the Garvey Elevator Site, Operable Unit 1 (OU1) in Hastings, Nebraska. As part of the LTRA, CPC conducts quarterly sampling at OU1.

The site background, history of operations, and past investigations are described in detail in the Final Remedial Investigation Report (HGL, 2011). OU1's location is illustrated on Figure 1. All Figures are located at the end of this Report.

Groundwater monitoring by EPA or its contractors at the site has been ongoing since the Interim Record of Decision (ROD) was issued on June 30, 2010 (EPA, 2010).

CPC conducted quarterly sampling for OU1 from March 6 through 8, 2023. The March 2023 sampling event included fourteen monitoring wells sampled quarterly, eight treatment system recovery well grab samples, one treatment system influent grab sample, and one treatment system effluent grab sample. CPC also collected eight SVE vapor samples and one effluent SVE vapor sample via grab samples with summa canisters. This Quarterly Monitoring Report documents the March 2023 sampling event.



2.0 FIELD ACTIVITIES

CPC conducted the quarterly sampling activities at OU1 on March 6 through 8, 2023. As a part of the March 2023 quarterly sampling event, samples collected included: groundwater from monitoring wells, groundwater extraction and treatment (GET) system process water, and soil vapor extraction (SVE) soil vapor. During the sampling event, groundwater and vapor samples were collected from 14 groundwater monitoring wells (MWs), 8 GET system recovery wells (RWs), GET system influent and effluent, 8 SVE wells, and SVE system effluent for analysis of selected volatile organic compounds (VOCs). All samples collected were assigned to EPA Work Order (WO) 2300072 for groundwater and GET process water and WO 2300073 for vapor samples. The samples from both WOs were submitted for analysis using the regular turnaround-time of thirty days. Copies of the sample collection field notes in the dedicated site logbook, EPA sample collection efield sheets, and the associated chain of custody records for the quarterly sampling events are included in Attachments 1a and 1b.

For the March 2023 sampling event, CPC was equipped with: a high-pressure bladder pump control unit to collect groundwater samples; an electronic water level indicator for depth-to-groundwater measurements; and a multiparameter water quality meter to collect water quality measurements during purging activities. All MW samples, except at MW nests MW-19A, -20A, -30A, and -31A, were collected from passive diffusion bags (PDBs) that were installed in the MWs during the December 2022 sampling event. Multi-level monitoring wells MW-19A, -20A, -30A, and -31A are outfitted with dedicated Waterloo Multilevel Sampling Systems and sample tubing. All four multilevel MWs were sampled during the March 2023 sampling event. The groundwater monitoring wells sampled during the March 2023 sampling event are shown on Figure 2.

The March 2023 GET process water and SVE vapor samples were collected at the sample locations for these media inside the western portion of the Quonset hut. The Quonset hut location is depicted on Figure 2. Both SVE-1 and SVE-2 were turned off on October 25, 2022, per EPA's request, therefore the SVE samples collected in March reflect SVE rebound sampling, as opposed to the samples collected before October 2022.

Static water levels for the sampled MWs were gauged on March 6, 2023. Field activities were conducted in accordance with the Quality Assurance Project Plan (QAPP) (CPC, December 2020). Any deviations from the procedures presented in the QAPP are discussed in Section 2.2.2. Quality control (QC) samples were collected to ensure usability of the data as discussed in Section 2.5.

2.1 Water Level Measurement Event

Manual water level measurements were obtained from 45 OU1 subsite monitoring/test wells on March 6, 2023. The water levels were measured manually using a Solinst model electronic water level indicator. Values for groundwater elevation for March 6, 2023 were also obtained for the four monitoring wells equipped with Waterloo Multilevel Sampling Systems (MW-19A&C; 20A,C,D,&E; -30A,C,D,&E; and -31A&C) for the time intervals immediately prior to Manual water level measurements. Because depth-to-water cannot be manually measured in these wells, groundwater elevations were obtained from the GET system programmable logic controller (PLC). Table 1 summarizes the groundwater level measurements and associated groundwater elevations for the field event.

2.2 Groundwater Sampling

During the March 2023 event, 14 investigative groundwater samples were collected for analysis of select VOCs. Insufficient water was present for sampling the 15th normally sampled well MW-4A. In addition, the following samples were collected and submitted for QC purposes: one duplicate groundwater sample, one trip blank, one matrix spike/matrix spike duplicate (MS/MSD) groundwater sample, and one equipment blank. All samples were submitted to the EPA Region 7 Laboratory for VOCs analysis. All samples were analyzed for carbon tetrachloride (CCL₄), chloroform, tetrachloroethene (PCE), and trichloroethene (TCE).

2.2.1 Purging and Sampling

Groundwater samples were collected from PDBs in 10 of the monitoring wells sampled. The remaining four wells are outfitted with dedicated Waterloo Multilevel Sampling Systems and sample tubing. These four wells were sampled using pneumatic low-flow rate purging (micro-purging) sampling methods. Temperature, pH, turbidity, oxidation reduction potential, and dissolved oxygen were recorded during the purging and stabilization process. Purging continued until the parameters stabilized as specified in the QAPP (CPC, December 2020). The final, stabilized, values of these parameters are summarized in Table 2. Any exceptions to the stabilization criteria or sampling procedure for the groundwater samples collected in March 2023 are noted in Section 2.2.2.

2.2.2 Deviations from the Work Plan

A synopsis of deviations from the approved QAPP is listed below:

- MW-4A was not sampled due to insufficient water inside well. CPC will gauge this well two
 weeks prior to the 2023 second quarter sampling event. If there is adequate groundwater a
 passive diffusion bag will be installed and the well will be sampled during the 2023 second
 quarter groundwater sampling event.
- No other deviations from the approved QAPP during this sampling event.



2.3 **GET Sampling**

GET process samples were collected from the eight operational RWs and from the GET system influent and effluent during the March 2023 quarterly sampling event. One MS/MSD sample and one duplicate GET process water (system influent) sample were also collected and submitted for QA/QC purposes. All samples were collected from the individual well sample ports or from the sample ports on the piping for the GET combined influent and effluent flows in the GET system equipment room. All GET samples were analyzed for concentrations of carbon tetrachloride (CCL₄), chloroform, tetrachloroethylene (PCE), and trichloroethylene (TCE). GET system analytical results are summarized in Tables 5 and 6. Table 9 summarizes operational data for the GET system during the first quarter of 2023.

2.4 SVE Sampling

EPA obtained approval from Nebraska Department of Environment and Energy (NDEE) to shut down the SVE system and the system was shut down on October 25, 2022. On March 6, 2023 at 8:15 am CPC turned the SVE system on and let the components run for approximately 24 hours, per the accepted EPA procedure. During the March 2023 sampling event, nine (9) primary SVE soil gas samples were collected from SVE wells SVE -3, -4, -7, -8, -9, -10, -11, -12, and from the SVE system effluent. All SVE soil gas samples were grab samples collected at sample ports from individual SVE well lines. Additionally, one duplicate sample of the SVE system effluent was collected and submitted for QC purposes. All SVE samples were analyzed for concentrations of CCL₄, chloroform, and PCE. SVE analytical results are summarized in Tables 7 and 8. After sampling activities the SVE system was shut down and SVE wells secured until the second quarter 2023 sampling event. CPC will perform normal sampling from the SVE system during each sampling event. Prior to future sampling, CPC will turn the system on and let it run for approximately 24 hours and will strive to maintain a uniform pre-sampling run time to maintain comparability of sample results from one event to the next. After a one year period if concentrations stay below cleanup levels, EPA will evaluate concentration from the one year rebound sampling and may decide to permanently decommission the SVE system.

2.5 Quality Assurance/Quality Control & Data Evaluation

CPC collected appropriate QC samples during the March 2023 sampling event to evaluate data quality, in accordance with the project QAPP (CPC 2020). CPC evaluated QC samples collected from groundwater monitoring wells, RWs, the GET system, and the SVE system during the March 2023 sampling event to assess data quality and validity. When the parameters did not fall within the specific method or data review guidelines, the data evaluator annotated or "flagged" the corresponding compounds. As discussed below, all data fell within appropriate limits defined by the QAPP and is acceptable for decision-making purposes as qualified.



No results were rejected during data review and all data are considered usable by the project as qualified. Specific data evaluation and QA/QC samples are discussed below in Sections 2.5.1 and 2.5.2.

2.5.1 GET, Recovery Well, and Groundwater Monitoring Well QA/QC Samples

Matrix Spike/Matrix Spike Duplicates

During the March 2023 sampling event, two MS/MSD triple volume samples were collected and submitted to the laboratory. MS/MSD samples were collected from the recovery well RW-1 (2300072-01) and monitoring well MW-5B (2300072-26) and submitted to the laboratory.

Trip Blanks

One trip blank (2300072-27) was prepared by, and submitted to, the laboratory during the March 2023 sampling event and analyzed for CCL₄, chloroform, PCE, and TCE. No compounds were detected in the trip blank sample. Based upon the trip blank analytical results, infiltration of the target VOCs into sample containers did not occur during travel from the lab, while onsite, or during shipment to the laboratory. The reported data is considered to be valid and defensible for the stated purpose of the investigation.

Duplicate Samples

Duplicate samples were obtained from the GET process water influent (2300072-10) and monitoring well MW-4B (2300072-24) during the March 2023 sampling event. As shown in Table 3, the CCL₄ Relative Percent Differences (RPD) for the GET influent field duplicate and MW-4B were both 0.0 percent. Chloroform, PCE, and TCE were not detected in the primary or duplicate samples, therefore RPDs were 0 percent for both GET influent and MW-4B. The RPDs were below the acceptability standard of 30 percent stated in the project QAPP (CPC, December 2020). Therefore, the accuracy of the sampling results is within QA/QC goals for the project.

Equipment Rinsate Blank

The sample pumps and taps for the GET process water and RWs are components of the dedicated sampling system; additionally, monitoring wells were sampled via PDBs or dedicated Waterloo pumps with the use of YSI water quality meter and flow cell. Therefore, the equipment rinsate blank was collected by passing laboratory provided deionized water over decontaminated flow cell, YSI meter, and interface probe into a dedicated collection container. During the March 2023 sampling event, no compounds were detected in the equipment rinsate blank (2300072-28). As such, the reported detections from the GET system, RWs, and groundwater wells are considered to be valid and not influenced by cross contamination.



2.5.2 SVE Quality Assurance Samples

Duplicate Sample

One duplicate sample (2300073-10) was collected from the SVE combined effluent during the March 2023 sampling event and was analyzed for CCL₄, chloroform, and PCE. As shown on Table 3, the RPDs for CCL₄, chloroform, and PCE were 0.0 percent. All RPDs are less than the acceptability standard of 25 percent specified in the project QAPP (CPC 2020) and are sufficient for the project's QA/QC goals.

2.6 **Equipment Decontamination**

All sampling containers and/or equipment used during the March 2023 sampling event were single use (PDBs, disposable nitrile gloves, etc.) or dedicated to the wells (the Waterloo System wells). Therefore, decontamination of sample collection equipment was not necessary aside from the following:

- Decontamination of the electronic water level indicator was conducted by wiping the measuring tape with a disposable towel that was soaked with a Liquinox®-water mixture during the tape's retrieval from each measured well. The tape was further rinsed with deionized water to remove contaminants and the Liquinox® mixture.
- The multiparameter water quality meter and associated flow cell were disassembled and washed with a Liquinox®-water mixture then rinsed with deionized water following stabilization at MW-19A, -20A, -30A, and -31A.

2.7 Investigation-Derived Waste Management

Excess GET system process water, monitoring well purge water, excess groundwater from PDBs, and used decontamination fluids were managed as liquid investigation-derived waste. The liquid investigation-derived waste was temporarily stored in 35-gallon polyurethane tank (dedicated to the project) during the sampling event. At the end of the event, the tank was slowly drained into the GET system sump to not overload the sump pump and shutdown the GET system.

Used personal protective equipment and expendable sampling supplies were collected in garbage bags and disposed of as municipal solid waste. Empty distilled water containers were transported to the EPA Region 7 Lab for re-use and/or recycling.

3.0 MARCH 2023 QUARTERLY SAMPLING RESULTS

Based on the available geologic data, the aquifer beneath the Site has been divided into three aquifer zones as discussed in the Remedial Investigation (RI) Report (HGL, 2011). In this Data Evaluation Report, these zones will be called aquifer Zones A/B, C, and D/E. Their approximate upper and lower depths below ground surface (bgs) are:

- Zones A/B Upper aquifer zone, extending from the water table to the top of the upper aquitard (approximately 115 to 125 feet below ground surface [ft bgs]).
- Zone C Medial aquifer zone, extending from the base of the upper aquitard to the top of the lower aquitard (approximately 130 to 155 ft bgs).
- Zone D/E Lower aquifer zone, extending from the base of the lower aquitard to the top of bedrock.
 - upper portion Zone D (approximately 160 to 200 ft bgs)
 - o lower portion Zone E (approximately 200 to 235 ft bgs)

The discussion of results presented in the following subsections is based on these aquifer zones and is limited to the OU1 portion of the Garvey Elevator Site.

3.1 Groundwater Levels and Potentiometric Surface

For March 2023, CPC contoured to account for pumping. Contours and flow directions are dashed where inferred. The groundwater level measurements for March 2023 are shown in Table 1. Potentiometric surface maps for the March 2023 water level data were prepared based on the static water levels measured in the OU1 site MWs. The potentiometric surfaces for aquifer Zones A/B, C, and D/E are illustrated on Figures 3, 4, and 5 respectively. Based on the water level measurements, the potentiometric groundwater contours indicate the general direction of groundwater flow of the upper, middle, and lower aquifers at the site is from northwest to southeast on the western section of property and to the northwest to west on the eastern section of property. Groundwater flow maps depict a cone of depression bordering the western section of the rail line created by the recovery wells. The groundwater flow directions are generally consistent with historical site results and regional groundwater flow.

3.2 Analytical Results

During the March 2023 quarterly sampling event, groundwater samples were collected from fourteen (14) OU1 MWs. (As noted above, a groundwater sample could not be collected from MW-4A because of a lack of water in the well.) Additionally, RW and process water samples were collected from the GET system. Soil vapor samples were collected from eight (8) SVE wells and an SVE system process vapor sample was collected from the SVE effluent. The analytical results of the groundwater, process water, SVE well vapor, and process vapor samples are discussed in the following sections. The EPA Region 7 Laboratory analytical report for the groundwater and process water samples (WO 2300072) is included as Attachment 3a. The EPA Region 7 Laboratory analytical report for the SVE wells and SVE process vapor samples (WO 2300073) is included as Attachment 3b.

3.2.1 Groundwater Monitoring Well Analytical Results

All groundwater samples were analyzed for CCL₄, chloroform, PCE, and TCE. The March 2023 groundwater MW analytical results are summarized in Table 4 and illustrated in Figures 6 and 7.

As shown in Table 4, CCL₄ was detected at concentrations exceeding the cleanup level in the Interim ROD for the site. The ROD cleanup level for CCL₄ is the federal drinking water maximum contaminant level of 5 micrograms per liter (μ g/L). CCL₄ was detected in 13 monitoring wells (and one duplicate sample) above laboratory method detection, and was detected above the ROD cleanup level of 5 μ g/L in 8 monitoring wells (and one duplicate sample). The ranges of CCL₄ detections and the number of wells in which detections were reported during the March 2023 sampling event are shown on the following page by aquifer zone:

- Aquifer Zone A/B Non-detect (1.0 μg/L) to 490 μg/L, detected in 10 of 11 wells; and
- Aquifer Zone C 53 μg/L to 74 μg/L, detected in all three wells sampled.

The March 2023 analytical data results for aquifer Zones A/B and C are illustrated on Figures 6 and 7 respectively. Time series plots showing concentration trends for CCL₄ in the sampled monitoring wells are presented in Attachment 4.

During the March 2023 sampling event, groundwater samples were collected from eleven monitoring wells (MW-5A, -6A, -19A, -20A, -30A, -31A, -47B, -48B, -49B, -50B, and -51B) screened in aquifer zone A/B. The highest CCL₄ concentration in Zone A/B occurred in monitoring well MW-51B with a concentration of 490 μ g/L. The detection 490 μ g/L in MW-51B is lower than the greatest concentration detected at this sampling location (more than 2,200 μ g/L in March 2021). The other CCL₄ detections ranged from 1.4 μ g/L to 140 μ g/L. CCL₄ was not detected in MW-20A.



CCL₄ levels in wells MW-5A, -6A, -19A, -30A, -47B, -50B increased from CCL₄ levels detected during fourth quarter 2022. CCL₄ in MW-20A has remained approximately the same since their last sampling event. CCL₄ concentrations decreased slightly from the values detected in fourth quarter 2022 in wells MW-31A, -48B, -49B, and -51B.

During the March 2023 sampling event, groundwater samples were collected from three monitoring wells (MW-3B, -4B, and -5B) screened in aquifer zone C. The highest CCL_4 concentration in zone C occurred in a MW-4B with a concentration of 74 μ g/L. The concentrations of CCL_4 in aquifer zone C wells MW-3B, -4B, and 5B have all increased since their last sampling event.

Chloroform was detected at or above the detection limit of 1.0 μ g/L in two monitoring wells (MW-31A and MW-51B) during March 2023. All detections (including the maximum March 2023 concentration of 4.2 μ g/L) were more than one order of magnitude (OoM) below the ROD cleanup level of 70 μ g/L. The three detections occurred in the A/B aquifer zone.

TCE and PCE were not detected in any of the MWs sampled during the March 2023 sampling event. The detection limit for TCE and PCE was 1.0 μ g/L for all samples.

3.2.2 **GET System Results**

Process water samples were collected from the GET system influent and effluent during the March 2023 quarterly sampling event. A summary of the GET system analytical results is presented in Table 5. CCL₄ was detected in the GET system influent sample (8.6 μ g/L) above the ROD clean-up level of 5 μ g/L. CCL₄ was not detected at a detection limit of 1.0 μ g/L in the March 2023 GET system effluent sample. Chloroform, PCE, and TCE were not detected in any of the March 2023 influent or effluent samples. The detection limit for these three COCs was 1.0 μ g/L in March 2023.

During the March 2023 sampling event, groundwater samples were collected from 8 RWs (RW-1, -2, -3, -4, -5R, -6R, -7, and -8). The GET RW analytical results are summarized in Table 6. CCL₄ was detected in all RWs except RW-1. CCL₄ concentrations in five of the RWs were above the ROD cleanup level of 5 μ g/L, with concentrations ranging from 1.1 μ g/L to 21.0 μ g/L.

Chloroform, PCE, and TCE were not detected in any of the RW samples. The detection limit for these COCs was 1.0 μ g/L for all samples.

3.2.3 SVE Well and System Results

Process vapor primary and duplicate samples were collected from the SVE effluent during the March 2023 sampling event. The SVE effluent vapor sample results are provided in Table 7. CCL₄ was detected in the samples at a concentration of 1.2 μ g/m³ in the effluent primary and 1.2 μ g/m³ in the effluent duplicate sample. The CCL₄ detections are approximately four OoM less than the ROD cleanup level of 95,000 μ g/m³ for shallow wells and 130,000 μ g/m³ for deep wells.

Chloroform and PCE were not detected in the SVE effluent primary and duplicate sample. The ROD did not establish cleanup levels for chloroform or PCE in SVE treatment system effluent.

In March 2023, soil vapor samples were collected from SVE wells SVE -3, -4, -7, - 8, -9, -10, -11, and -12. Results of the SVE well vapor samples are provided in Table 8. As noted above, the SVE system was shut down on October 25, 2022, therefore the results from March 2023 represent rebound concentrations. CCL₄ was detected in 8 wells at concentrations ranging from 41 μ g/m³ to 21,000 μ g/m³. All detections were less than the ROD clean-up levels of 95,000 μ g/m³ for shallow wells and 130,000 μ g/m³ for deep wells.

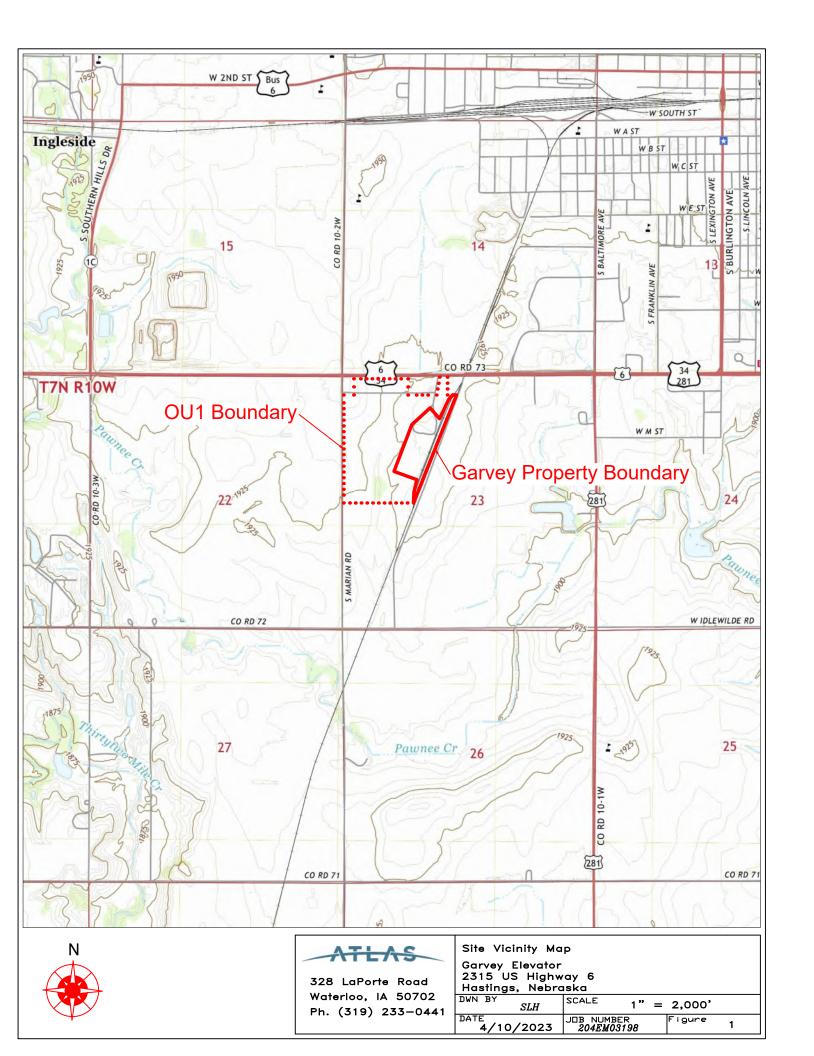
Chloroform was detected in 8 SVE well samples at concentrations ranging from $0.12 \mu g/m^3$ to 35 $\mu g/m^3$. The ROD did not establish cleanup levels for chloroform.

PCE was detected in SVE-3, -4, -7, -8, 9, 10, and -11 with concentrations ranging from $0.38 \,\mu g/m^3$ to $32.0 \,\mu g/m^3$. PCE was below laboratory detection limit in SVE-12 during this sampling event. The ROD did not establish cleanup levels for PCE.



Appendix A Figures





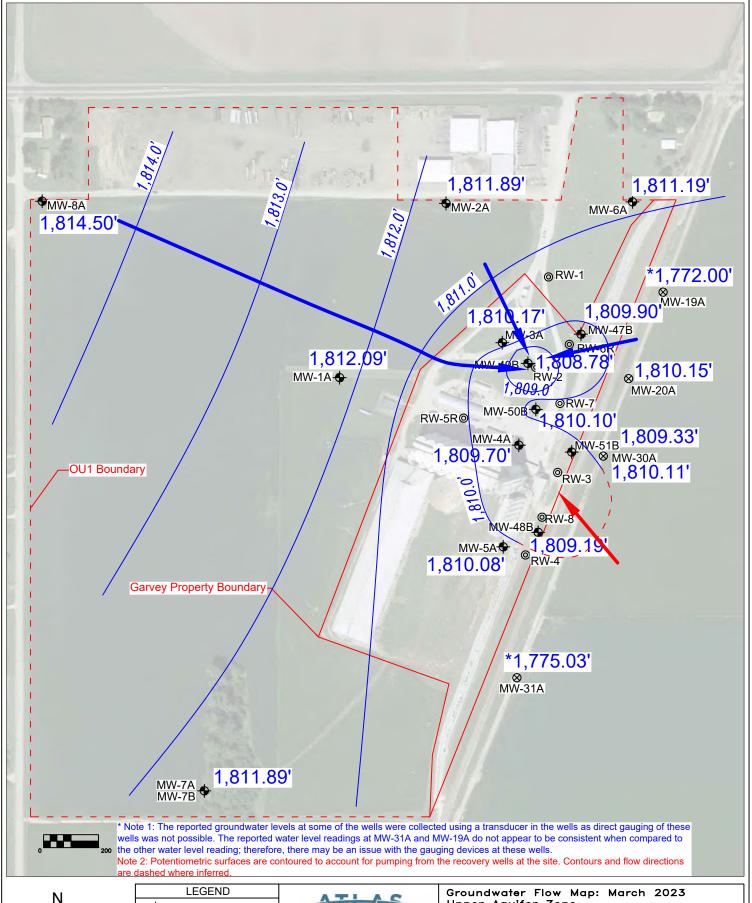




- ⊗ Multi-Level Well
- Recovery Well
- △ SVE Well
- Injection Well
- System Piping

Garvey Elevator 2315 US Highway 6 Hastings, Nebraska

nasinigs, nebraska							
DWN BY SLH	SCALE 1" =	350'					
DATE 3/6/2023	J□B NUMBER 204EM03198	Figure 2					





- Monitoring Well
 - Multi-Level Well
- Recovery Well
- SVE Well
- Injection Well
- System Piping



Upper Aquifer Zone Garvey Elevator 2315 US Highway 6 Hastinas, Nebraska

DWN BY	SCALE 1" =	350'					
DATE 4/19/2023	JOB NUMBER 204EM03198	Figure 3					





- Monitoring Well
- Multi-Level Well 8
 - Recovery Well
- SVE Well
- - System Piping



Groundwater Flow Map: March 2023 Middle Aquifer Zone Garvey Elevator 2315 US Highway 6

Hastings, Nebraska

DWN BY	SCALE 1" =	350'
DATE 4/19/2023	JOB NUMBER 204EM03198	Figure 4



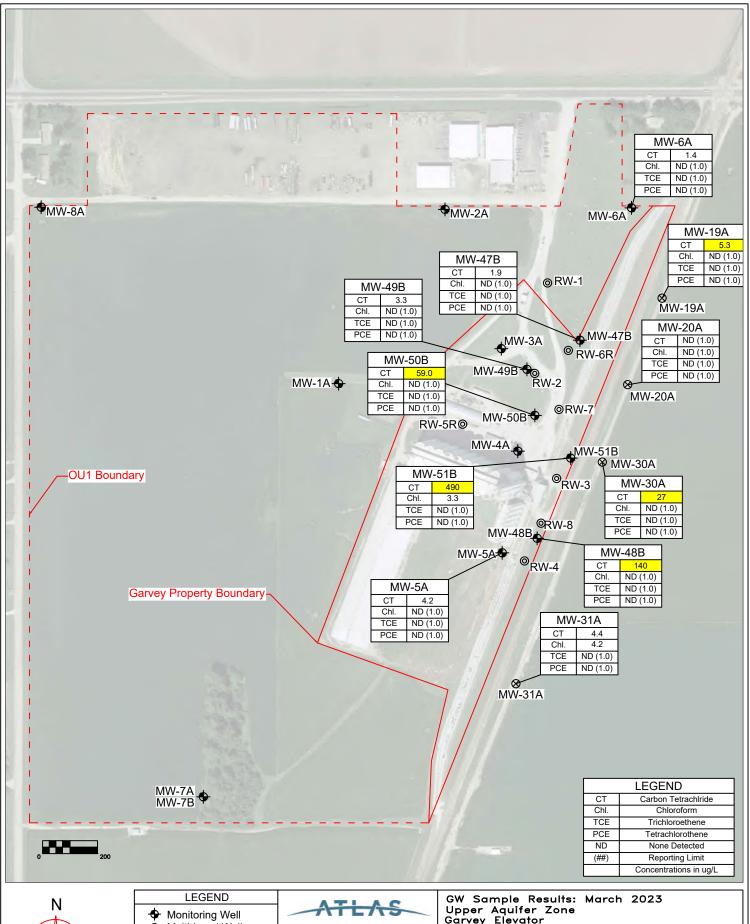


- Multi-Level Well 8
- Recovery Well
- SVE Well
- Injection Well
- ... System Piping

Lower Aquifer Zone Garvey Elevator 2315 US Highway 6

Hastings, Nebraska

SLH	SCALE 1" =	350'
DATE 4/10/2023	JOB NUMBER 204EM03198	Figure 5



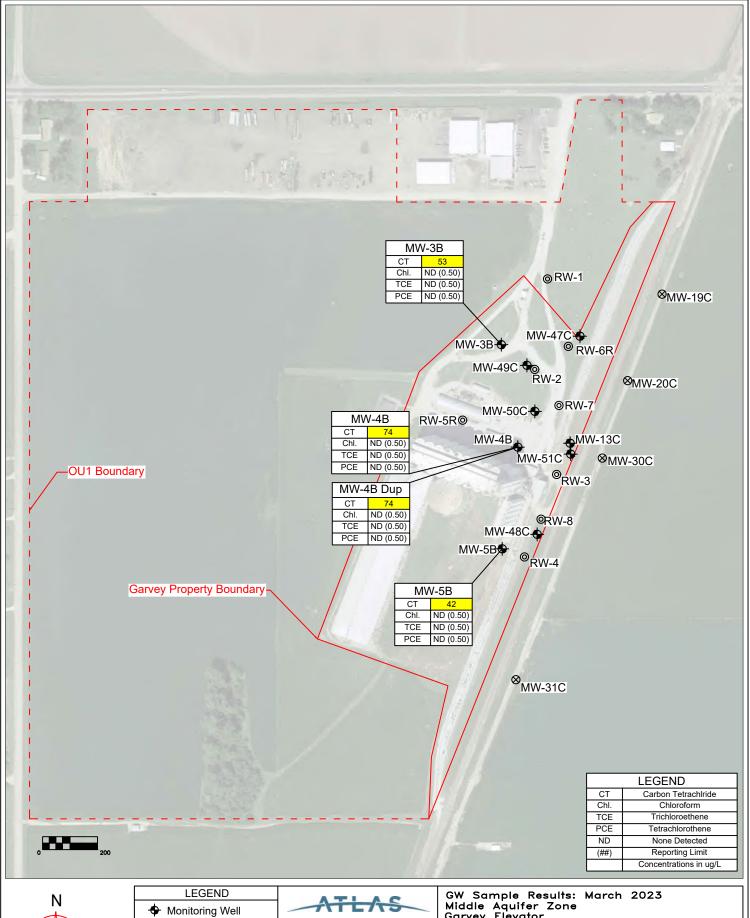


- Multi-Level Well 8
- 0 Recovery Well
- SVE Well Δ
- Injection Well
- ... System Piping

Upper Aquifer Zone Garvey Elevator 2315 US Highway 6

Hastings, Nebraska

DWN BY SCALE 1" = 350' SLH JOB NUMBER 204EM03198 Figure 4/10/2023





- Recovery Well
- △ SVE Well
- Injection Well
- System Piping

Middle Aquifer Zone Garvey Elevator 2315 US Highway 6 Hastings, Nebraska

Hashings, Nebraska							
DWN BY	SCALE 1" =	350'					
DATE 4/10/2023	JOB NUMBER 204EM03198	Figure 7					

Appendix B Tables



Table 1 Water Level Measurement Data March 6, 2023 Quarterly Sampling Event Garvey Elevator OU1

Hastings, Nebraska

Well	Depth to Water TOC Water Level			
wen	(ft btoc)	Elevation	Elevation (ft MSL)	Zone
MW-1A	114.99	1927.08	1812.09	A/B
MW-2A	118.33	1930.22	1811.89	A/B
MW-3A	124.10	1934.27	1810.17	A/B
MW-3B	122.97	1932.75	1809.78	C
MW-3D	122.75	1933.37	1810.62	D/E
MW-3E	121.75	1932.25	1810.50	D/E
MW-4A	121.90	1931.60	1809.70	A/B
MW-4B	121.38	1931.38	1810.00	C
MW-5A	120.18	1930.26	1810.08	A/B
MW-5B	121.28	1931.72	1810.44	C
MW-5D	121.62	1931.87	1810.25	D/E
MW-6A	120.80	1931.99	1811.19	A/B
MW-6D	121.28	1931.14	1809.86	D/E
MW-6E	122.20	1932.13	1809.93	D/E
MW-7A	111.33	1923.22	1811.89	A/B
MW-8A	128.72	1943.22	1814.50	A/B
MW-13C	121.41	1929.65	1808.24	С
MW-13E	120.50	1930.43	1809.93	D/E
MW-19A*	157.21	1929.21	1772.00	A/B
MW-19C*	184.21	1929.21	1745.00	A/B
MW-20A*	119.06	1929.21	1810.15	A/B
MW-20C*	149.59	1929.21	1779.62	A/B
MW-20D*	132.07	1929.21	1797.14	A/B
MW-20E*	222.73	1929.21	1706.48	A/B
MW-30A*	120.17	1930.28	1810.11	A/B
MW-30C*	117.17	1930.28	1813.11	A/B
MW-30D*	119.91	1920.28	1800.37	A/B
MW-30E*	119.72	1930.28	1810.56	A/B
MW-31A*	156.60	1931.63	1775.03	A/B
MW-31C*	183.47	1931.63	1748.16	A/B
MW-47B	122.19	1932.09	1809.90	A/B
MW-47C	125.03	1932.09	1807.06	С
MW-47D	124.07	1932.10	1808.03	D/E
MW-48B	121.86	1931.05	1809.19	A/B
MW-48C	120.87	1931.03	1810.16	С
MW-48D	121.77	1931.05	1809.28	D/E
MW-49B	122.68	1931.46	1808.78	A/B

Well	Depth to Water (ft btoc)	TOC Elevation	Water Level Elevation (ft MSL)	Aquifer Zone
MW-49C	122.38	1931.47	1809.09	С
MW-49D	121.15	1931.46	1810.31	D/E
MW-50B	121.41	1931.51	1810.10	A/B
MW-50C	123.03	1931.54	1808.51	С
MW-50D	121.34	1931.46	1810.12	D/E
MW-51B	122.27	1931.60	1809.33	A/B
MW-51C	123.28	1931.62	1808.34	С
MW-51D	121.71	1931.62	1809.91	D/E

^{* -} Manual water level measurement cannot be made for this well.

Detected water inside end cap of well. (Not representative of true water level)

Table 2 Summary of Field Parameter Results March 2023 Quarterly Sampling Event Garvey Elevator OU1

Hastings, Nebraska

Sample Location	Sample Collection Date	EPA Sample Designation	Temperature (°C)	pH (SU)	Specific Conductivity (mS/cm)	Total Dissolved Oxygen (mg/L)	ORP (mV)
MW-19A	03/07/2023	2300072-15	10.24	7.37	0.901	4.81	2.4
MW-20A	03/07/2023	2300072-14	8.90	6.88	0.841	0.29	-23.9
MW-30A	03/07/2023	2300072-13	9.87	7.18	0.789	12.16	12.4
MW-31A	03/07/2023	2300072-12	8.06	7.04	0.947	1.00	-31.9

NA - Not Applicable

N/S - Not Sampled

March 2023 Quarterly Sampling Relative Percent Difference Calculations Garvey Elevator OU1

Hastings, Nebraska

GET System Process Water

Contaminant	GET System Influent				
Contaminant	2300072-	-09	2300072-	10	RPD %
Carbon Tetrachloride [µg/L]	8.6		8.6		0.0
Chloroform [µg/L]	<1.0	U	<1.0	U	0*
Tetrachloroethylene [µg/L]	<1.0	U	<1.0	U	0*
Trichloroethylene [µg/L]	<1.0	U	<1.0	U	0*

Acceptable RPD range for GET process water samples is 0-30% as per the QAPP (CPC 2020).

SVE System Effluent Process Vapor

Contaminant	SVE System Effluent						
Contaminant	2300073-09		2300073-10		RPD %		
Carbon Tetrachloride [µg/L]	1.20		1.20		0.0		
Chloroform [µg/L]	< 0.12	U	< 0.12	U	0*		
Tetrachloroethene [µg/L]	< 0.34	U	< 0.34	U	0*		
Trichloroethene [μg/L]	N/S		N/S		N/S		

Acceptable RPD range for SVE well and SVE process vapor samples is 0-25% as per the QAPP (COC 2020).

N/S - Not Sampled

Monitoring Well Groundwater

Contominant	MW-4B						
Contaminant	2300072-23		2300072-24		RPD %		
Carbon Tetrachloride [µg/L]	74.0		74.0		0.0		
Chloroform [µg/L]	<1.0	U	<1.0	U	0*		
Trichloroethene [µg/L]	<1.0	U	<1.0	U	0*		
Tetrachloroethene [µg/L]	<1.0	U	<1.0	U	0*		

Acceptable RPD range for groundwater samples is 0-30% as per the QAPP (CPC 2020).

Note - Bold RPD values indicate that results exceed the RPD criteria in the Quality Assurance Project Plan.

U - not detected

RPD - relative percent difference

* While technically an RPD cannot be calculated if both the primary and duplicate results are non-detect, this situation is generally considered to be equivalent to an RPD of 0.

Groundwater Monitoring Well Analytical Results Summary March 2023 Quarterly Sampling Event

Garvey Elevator OU-1

Hastings, Nebraska

Sample Point Designation	Sample Collection Date	EPA Laboratory ID	Carbon Tetrachloride [µg/L]	Chloroform [µg/L]	TCE [µg/L]	PCE [μg/L]
Cleanup Levels			5.0 (1)	70.0 (1)	5.0 (2)	5.0 (2)
MW-3B	03/08/2023	2300072-19	53	ND (1.0)	ND (1.0)	ND (1.0)
MW-4A		Sa	ample not collecte	d due to low gr	oundwater	
MW-4B	03/08/2023	2300072-23	74	ND (1.0)	ND (1.0)	ND (1.0)
MW-4B Dup	03/08/2023	2300072-24	74	ND (1.0)	ND (1.0)	ND (1.0)
MW-5A	03/08/2023	2300072-25	4.2	ND (1.0)	ND (1.0)	ND (1.0)
MW-5B*	03/08/2023	2300072-26	42	ND (1.0)	ND (1.0)	ND (1.0)
MW-6A	03/08/2023	2300072-18	1.4	ND (1.0)	ND (1.0)	ND (1.0)
MW-19A	03/07/2023	2300072-15	5.3	ND (1.0)	ND (1.0)	ND (1.0)
MW-20A	03/07/2023	2300072-14	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
MW-30A	03/07/2023	2300072-13	27	ND (1.0)	ND (1.0)	ND (1.0)
MW-31A	03/07/2023	2300072-12	4.4	4.2	ND (1.0)	ND (1.0)
MW-47B	03/08/2023	2200459-21	1.9	ND (1.0)	ND (1.0)	ND (1.0)
MW-48B	03/08/2023	2300072-16	140	ND (1.0)	ND (1.0)	ND (1.0)
MW-49B	03/08/2023	2300072-20	3.3	ND (1.0)	ND (1.0)	ND (1.0)
MW-50B	03/08/2023	2300072-22	59.0	ND (1.0)	ND (1.0)	ND (1.0)
MW-51B	03/08/2023	2300072-17	490	3.3	ND (1.0)	ND (1.0)

Bold font indicates that the contaminant was detected.

Italicized Denotes detected value greater than ROD level shown.

(1) Cleanup levels from Table 10, Interim Record of Decision, Garvey Elevator Superfund Site, OU 1 and OU 2, Hastings, Nebraska, September 2013.

(2) Safe Drinking Water Act Maximum Contaminant Level.

Aquifer Zone C Wells.

^{* -} MS/MSD volume collected.

Summary of GET System Results

March 2023 Sampling Event Garvey Elevator OU1

Hastings, Nebraska

Sample Point Designation	Date ID		Carbon Tetrachloride [ug/L]	Chloroform [ug/L]	Tetrachloroethene [ug/L]	Trichloroethene [ug/L]
Cleanup Levels		5.0 (1)	70.0 (1)	5.0 (1)	5.0 (1)	
Influent	3/6/2023	2300072-09	8.6	ND (1.0)	ND (1.0)	ND (1.0)
Influent Field Duplicate	3/6/2023	2200072-10	8.6	ND (1.0)	ND (1.0)	ND (1.0)
Effluent	3/6/2023	2200072-11	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)

⁽¹⁾ Maximum contaminant levels from Safe Drinking Water Act.

ND – Not detected above the reporting limit, which is indicated within the ().

FD - Field duplicate.

ug/L – micrograms per liter.

Italicized Denotes detected value greater than ROD level shown.

Bold font indicates that the contaminant was detected.

GET Recovery Well Water Analytical Results Summary March 2023 Quarterly Sampling Event

Garvey Elevator OU1

Hastings, Nebraska

Sample Location	Collection Date	EPA Laboratory ID	Carbon Tetrachloride [ug/L]	Tetrachloride Chloroform		PCE [ug/L]
Cleanup Levels		5.0 (1)	70.0 (1)	5.0 (2)	5.0 (2)	
RW-1*	03/06/2023	2300072-01	ND (1.0)	ND (1.0)	ND (1.0)	ND (1.0)
RW-2	03/06/2023	2300072-02	10.0	ND (1.0)	ND (1.0)	ND (1.0)
RW-3	03/06/2023	2300072-03	19.0	ND (1.0)	ND (1.0)	ND (1.0)
RW-4	03/06/2023	2300072-04	8.0	ND (1.0)	ND (1.0)	ND (1.0)
RW-5R	03/06/2023	2300072-05	1.1	ND (1.0)	ND (1.0)	ND (1.0)
RW-6R	03/06/2023	2300072-06	3.2	ND (1.0)	ND (1.0)	ND (1.0)
RW-7	03/06/2023	2300072-07	21.0	ND (1.0)	ND (1.0)	ND (1.0)
RW-8	03/06/2023	2300072-08	6.2	ND (1.0)	ND (1.0)	ND (1.0)

ND – Not detected above the reporting limit, which is indicated within the ().

Italicized Detected value greater than cleanup level.

Bold font indicates that the contaminant was detected.

^{* -} MS/MSD volume collected.

⁽¹⁾ Cleanup levels from Table 10, Interim Record of Decision, Garvey Elevator Superfund Site, OU 1 and OU 2, Hastings, Nebraska, September 2013.

⁽²⁾ Safe Drinking Water Act Maximum Contaminant Level.

Summary of SVE Effluent Results March 2023 Sampling Event

Garvey Elevator OU1 Hastings, Nebraska

Sample Point Designation	Sample Collection Date	EPA Laboratory ID	Carbon Tetrachloride [ug/m³]	Chloroform [ug/m³]	Tetrachloroethene [ug/m³]	
Cleanup Levels ⁽¹⁾			95,000 ⁽²⁾ / 130,000 ⁽³⁾	NA	NA	
Effluent	3/7/2023	2300073-09	1.20	< 0.12	< 0.34	
Effluent Field Duplicate	3/7/2023	2300073-10	1.20	< 0.12	< 0.34	

- (1) Cleanup levels derived based on the soil concentration above which leaching to groundwater causes an exceedance of MCLs. From Table 10 in the Interim Record of Decision (ROD), Garvey Elevator Superfund Site, OU 1 and OU 2, Hastings, Nebraska, September 2013.
- ⁽²⁾ Cleanup level for Fine-Grained Subsurface Soil. Fine-grained material defined as the upper 65 ft of loess and interbedded unsaturated soils beneath OU1. From Table 10 of the 2013 Interim ROD.
- (3) Cleanup level for Course-grained Subsurface Soil. Coarse-grained material defined as the unsaturated soil beneath the upper fine-grained material at OU 1. From Table 10 of the 2013 Interim ROD.

FD - Field duplicate.

NA – Not Applicable. No cleanup level listed in the 2013 Interim ROD for this chemical. ug/m3 – micrograms per cubic meter.

Bold font indicates that the contaminant was detected.

SVE Well Analytical Results Summary March 2023 Quarterly Sampling Event Garvey Elevator OU1

Hastings, Nebraska

Sample	Collection Date	EPA Laboratory ID	Carbon Tetrachloride [µg/m3]	Chloroform [µg/m3]	PCE [μg/m3]				
		Shallow	SVE Wells ⁽¹⁾						
	Cle	anup Level ⁽²⁾	95,000	NA	NA				
SVE-3	03/07/2023	2300073-01	41	0.85 J	0.38				
SVE-4	03/07/2023	2300073-02	85	1.6 J	0.80				
SVE-7	03/07/2023	2300073-03	21,000	35 J	32.0				
SVE-8	03/07/2023	2300073-04	71	1.0	1.30				
SVE-12	03/07/2023	2300073-08	13.0	0.12	< 0.34				
	Deep SVE Wells ⁽³⁾								
	Cle	anup Level ⁽⁴⁾	130,000	NA	NA				
SVE-9	03/07/2023	2300073-05	300	0.61	0.48				
SVE-10	03/07/2023	2300073-06	310	0.59	0.49				
SVE-11	03/07/2023	2300073-07	380	0.62	0.61				

ND – Not detected above the reporting limit, which is indicated within the ().

Bold font indicates that the contaminant was detected.

##.## Detected value greater than cleanup level.

Dup - Duplicate Sample

⁽¹⁾ Shallow wells are located in the shallow fine-grained subsurface soil, which are defined in the Interim Record of Decision, Garvey Elevator Superfund Site, OU 1 and OU 2, Hastings, Nebraska, September 2013 (the 2013 Interim ROD) as the upper 65 ft of loess and interbedded unsatruated soils beneath OU 1.

⁽²⁾ Fine-grained subsurface soil cleanup level from Table 10 of the 2013 Interim ROD.

⁽³⁾ Deep wells are located in the coarse-grained subsurface soils, which is defined in the 2013 Interim ROD as the unsaturated soils beneath the upper fine grained materials at OU 1.

⁽⁴⁾ Coase-grained subsurface soil cleanup level from Table 10 of the 2013 Interim ROD. Wells not listed (SVE -1, -2, -5, and -6 [shallow]) were not sampled in March 2023.

 Table 9

 GET Recovery Well First Quarter 2023 Operational Data Summary Garvey Elevator OU1

 Hastings, NE

Period Start	1/1/23 Nea	arest Inspection	Date	01/4/2023						
Period End	riod End 3/31/23 Nearest Inspection Date			03/27/2023						
Recovery Well	Quarter Sample Date	Period Cumulative Volume (gal) as of 3/27/2023	Previous Period's Cumulative Volume (gal) as of 12/30/2022	Cumulative Volume Pumped During Period (gal)	Length	Calculated Period Pumping Rate (gal per min)	Total Hour During Period	Operated	Average Flow Rate During Period (gpm) ⁽²⁾	Comments
RW-1	03/6/2023	7,341,863	6,978,911	362,952	90	2.8	2160	97%	2.90	De-watering well at higher pump rates
RW-2	03/6/2023	13,603,857	12,726,322	877,535	90	6.8	2160	97%	7.00	De-watering well at higher pump rates
RW-3	03/6/2023	8,149,391	7,685,776	463,615	90	3.6	2160	88%	4.06	De-watering well at higher pump rates
RW-4	03/6/2023	14,732,825	13,965,997	766,828	90	5.9	2160	90%	6.54	De-watering well at higher pump rates
RW-5R	03/6/2023	10,274,304	9,921,210	353,094	90	2.7	2160	96%	2.84	De-watering well at higher pump rates
RW-6R	03/6/2023	207,312,928	203,103,536	4,209,392	90	32.5	2160	58%	55.73	Pump not working from 1/16/23 to 2/27/23
RW-7	03/6/2023	138,106,320	130,643,808	7,462,512	90	57.6	2160	97%	59.45	De-watering well at higher pump rates
RW-8	03/6/2023	231,881,472	219,349,488	12,531,984	90	96.7	2160	96%	100.45	

⁽¹⁾ Period Length and remaining calculations based on the closest inspection dates to the start and end of the period, not the period start and end dates.

⁽²⁾ Averge Flow Rate is the average recorded from system computer during O&M site visits during the period.

Appendix C Attachments



Attachment 1a: Field Logbook Pages and Field Sheets for WOs 2300072 & 2300073





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REV:

1.0

EFFECTIVE DATE: 02/10/20

								PA	GE 1 OF 5
SITE NA	AME:	Garvey			LOGO	GER NAME:	2	C/BT	
SITE LO	CATION:	Hasting	s Nebrasl	<u>ca</u>	ERT V	VAM:			
LOG DA	ATE:	3/6/23		_	WA#		_		
Time	Well I.D.	Latitude	Longitude	Elevation of well (TOC)	Depth to bottom of well (feet)	Depth to water (feet)	Depth to product (feet), if any	Product type/ Product thickness	COMMENTS (pH, temperature, specific conductance, weather conditions)
1250	MW-1A					114,99	_	_	
1209	MW-2A					118.33	-	-	
1255	MW-3A					124.10	_	_	
1257	MW-3B					122.97	-	-	
1259	MW-3D				*	121.75	_	1	
1301	MW-3E				7	122.75	1	1	
1342	MW-4A				122.05	Drylis	190)-	-	(121.90)
1340	MW-4B					121.38	-		
1240	MW-5A					120.18	_	-	
NOTES MEASU Weather Rain: He	REMENT I	REFERENC Temperate	CE POINT Fl ure (°F/°C):_ _ Light:	36	_GROUND S	SURFACE C	OR <u>X</u> TO	OP OF CASI	ING



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REV:

1.0

EFFECTIVE DATE: 02/10/20

								PA	GE 2OF 5
SITE N	AME:	Garvey		_	LOGO	GER NAME:	2	C/BT	
SITE LO	OCATION:	Hasting	s Nebrasł	ка	ERT V	WAM:			
LOG DA	ATE:	3/6/2	2	_	WA#		·		
Time	Well I.D.	Latitude	Longitude	Elevation of well (TOC)	Depth to bottom of well (feet)	Depth to water (feet)	Depth to product (feet), if any	Product type/ Product thickness	COMMENTS (pH, temperature specific conductance, weather conditions)
1238	MW-5B					121.28	-		
1235	MW-5D					121.62	J	_	
1217	MW-6A					120.80	1	~	
1215	MW-6D					121.28	J	-	
1219	MW-6E					122.20	1	I	
1156	MW-7A					111.33	ı	_	
1434	MW-8A					128.72	1	~	
南欧	MW-13C					12786	121.41		
13:16	MW-13D					120.5			
13:16	MW-13C MW-13D Top of casin	g				128.12		~	
Weather	Conditions	: Temperat	CE POINT Fl ure (°F/°C):_ _ Light:	30°		SURFACE C	OR <u>X</u> TO	OP OF CASI	NG



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REV: 1.0

EFFECTIVE DATE: 02/10/20

								PA	GE_3OF_5
SITE NA	AME:	Garvey			LOGO	GER NAME:	-	SC/BT	
SITE LO	CATION:	Hasting	s Nebrasl	ka	ERT	WAM:			
LOG DA			'23		WA#		_		
Time	Well I.D.	Latitude	Longitude	Elevation of well (TOC)	Depth to bottom of well (feet)	Depth to water (feet)	Depth to product (feet), if any	Product type/ Product thickness	COMMENTS (pH, temperature specific conductance, weather conditions)
1337	MW-19A					157.21			
1	MW-19C					184.21			
	MW-20A					119.04			
	MW-20C					149.59			
	MW-20D					132.07			
	MW-20E					222.73			
	MW-30A					120.17			
	MW-30C					117.17			
4	MW-30D					119.91			
TOC = T	Γορ of casin	g							
MEASU	REMENT I				_GROUND	SURFACE C	OR <u>X</u> TO	OP OF CASI	NG
Weather	Conditions	Temperat	ure (°F/°C):_	34	-				
			_ Light:						
	ric Pressure								



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REV: 1.0

EFFECTIVE DATE: 02/10/20

								PA	GE <u>4</u> OF <u>5</u>
SITE NA	AME:	Garvey			LOGO	GER NAME:		JC/Bt	-
SITE LC	CATION:	Hasting	s Nebrasl	- ка	FRT	WAM:			
LOG DA			23	_		.,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	-		
LOGDA	VIL.	_3/0/	,,,	_	WA#		-		
Time	Well I.D.	Latitude	Longitude	Elevation of well (TOC)	Depth to bottom of well (feet)	Depth to water (feet)	Depth to product (feet), if any	Product type/ Product thickness	COMMENTS (pH, temperature specific conductance, weather conditions)
(337	MW-30E					119.72			
1337	MW-31A					154.40			
1337	MW-31C					183.47			
1225	MW-47B					122.19			ī.
1222	MW-47C					125.03			
1229	MW-47D					124.07			
1245	MW-48B					121.86			
1249	MW-48C					120.97			
1251	MW-48D					121,77			
TOC = 7	op of casin	g							
NOTES:									
MEASU	REMENT I	REFERENC	CE POINT F	ROM	_GROUND S	SURFACE O	R X TO	OP OF CASI	NG
Weather	Conditions	: Temperat	ure (°F/°C):_	36°					
			_ Light:						
	ric Pressure			-					
	mificant oh								



SOP: ERT-PROC-2043-19

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REV:

1.0

EFFECTIVE DATE: 02/10/20

			FIGURE	. EARWIPI	e lield D	ATA SHEET	-		
								PA	GE <u>5</u> OF 5
SITE NA	AME:	Garvey		_	LOGO	GER NAME:		JC/BT	
SITE LO	CATION:	Hasting	s Nebrasl	<u>ka</u>	ERT	WAM:			
LOG DA	ATE:	3161	23		WA#				
Time	Well I.D.	Latitude	Longitude	Elevation of well (TOC)	Depth to bottom of well (feet)	Depth to water (feet)	Depth to product (feet), if any	Product type/ Product thickness	COMMENTS (pH, temperature, specific conductance, weather conditions)
1323	MW-49B					122.68			
1325	MW-49C					122.38			
1327	MW-49D					121.15			
1331	MW-50B					121.41			
1333	MW-50C					123.03			
1334	MW-50D					121.34			
1304	MW-51B					122.27			
1259	MW-51C					123,28			
1302	MW-51D					121.71			
TOC = 7	Top of casin	g							
NOTES:									
MEASU	REMENT I	REFERENC	E POINT FI	ROM	GROUND	SURFACE O	R <u>X</u> TO	OP OF CASI	NG
Weather	Conditions	: Temperate	ure (°F/°C):_	36°					
Rain: He	eavy:N	1edium:	_ Light:						
Baromet	ric Pressure	:							
Other sig	gnificant ob	servations.							

Air Sampling Garvey Elevator Federal Superfund Site Hastings Nebraska

Sample Location	Canister I.D.	EPA Sample Number	Initial Pressure (Hg)	Final Pressure (Hg)	Time (AM/PM)	Date
SVE-1	1	-	-	-		•
SVE-2	*			-	,	
SVE-3	L697	2300073-01	27.5	24 1.5	2280	3/7/23
SVE-4	857	2300073-02	27.5	7.5	831	3/7/23
SVE-5	ı	1				
SVE-6	-		•		-	
SVE-7R	810	2300073-03	27.5	1,5	0836	3/7/23
SVE-8	845	2300073-04	24.5	1.5	0838	3/7/23
SVE-9	930	2300073-05	27.5	0.5	1489	3/7/23
SVE-10	918	23000 73-06	37.5	0.5	4480	3/7/23
SVE-11	601	2300073-07	27.5	3,5	4480	3/7/23
SVE-12	602	23,000,73-08	27.5	4.0	0850	3/7/23
Effluent	896	2320073-09	27.5	4,0	0060	3/7/23
Field Dup	767	2300073-10	26.5	2.0	0300	3/7/23

		10	Clean	MYS			
	· ·	GROUNDWA					
	\$ 3-6-2	3	JOB NU		EM03198		
ROJECT: Garvey			EVENT:		The		
VELL ID: RW-1			LOCATIO	N: Hastings	, NE		
ONDITION OF WELL	BOLTS: GOOD	☐ REPLACE #	□ N/A	BOLL	ARDS: □ G	OOD 🗆 REPAIR #	_ 🗆 N/A
OCK: GOOD GREPLACE	E 🗆 N/A	EXPANSION CAP:	GOOD	□ REPLACE	PAD: 🗆	GOOD REPAIR (C	omment)
WEATHER CONDITIONS:	Cloudy		AMBIEN	T TEMP: NEL: J	30		
REVIEWED BY:	<u> </u>		PERSON	NEL: J	CB - B	3T	
				,			
WELL DIAMETER: 1"	2" 4"						
TOTAL DEPTH from TOC	(ft.):		ANAL	YSIS: VOC	'e		
DEPTH TO NAPL from TO	OC (ft.):		ANAL	.1010. 100			
DEPTH TO WATER from	roc (ft.):						
						GROUNDWA	TER SAMPLING
						START:	
						FINISH:	
						VOLUME PURGE	D (gal):
emperature (C°): H (units): PRP (mV): Corrected ORP** (mV): urbidity (NTU): O' (mg/L): Colume Purged (gal): Lepth to Water (ft): Color:			>				(39 (1 pH Un (+/- 10 m) (109 (<0.3 Fee
odor:							
				We	II Goes D	ry While Purging	
DO Range = 0 to 14.6 m Sample Data	ng/L, max of 8.6 n		☐ Bailer		RP = Field	ORP + 200 mV	
	Date	Time	Bottles	Filtered (Y/I	۷)		
Sample ID	(m/d/y)	(hh:mm)	(to lab)	(0.45 mm)		Remark	(S
2300072-01	3-6-23	0855	9	N	m	s/msD	
2300072-27 COMMENTS:	3/1 +0 3/8	830-1006	3	N	T	rip Blank	

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				JNDWA	TER SA	MPLIN	G FORM	1			
DATE:		3-6-	23		JOB NU	MBER:		103198			
PROJECT: Garvey					EVENT:			of 1	4		
WELL ID: RW-2					LOCATION	on: Ha	stings, N	IE			
		GOOD	□ REPLA	CE #	□ N/A		BOLLAR	DS: 🗆 GO			0 N/
LOCK: GOOD GREPLACE		, ,	-	ON CAP:	GOOD				GOOD []	REPAIR (Comme
WEATHER CONDITIONS:	TC	1011	7			T TEMP	: 3	0'5			
REVIEWED BY:	, _				PERSON	NEL:	JC-	BT			
WELL DIAMETER: 1" 2	" 4"										
TOTAL DEPTH from TOC (1						
DEPTH TO NAPL from TOO					ANAL	YSIS:	VOC's				
DEPTH TO WATER from To					1						
									GRO	UNDWA	TER
									START		
*									FINISH		
									1	IE PURG	ED (g
IN SITU TESTING											
Circle one: DEVELOPMEN	T S	AMPLING			☐ Bailer	☐ Pump	De	scription:	Bladder		
Time (ham):											
Temperature (C°):											
pH (units): ORP (mV):											
Corrected ORP** (mV):							-				
Turbidity (NTU):											
DO* (mg/L):					×						1
Volume Purged (gal):											
Depth to Water (ft):								1			
Color:	/										
Odor:				-						1	
							Well	Goes Dr	v While	Purging	
*DO Range = 0 to 14.6 mg	/L, max	of 8.6 n	ng/L at 2	5°C		**Correc		= Field C			
			<u> </u>			25/100	0111	. ,0,4 0	200		
Sample Data					☐ Bailer	□ Pump	De	scription:	Grab		
	D	ate	Ti	me	Bottles	Filtere	d (Y/N)				
Sample ID	(m	d/y)	(hh	:mm)	(to lab)		5 mm)			Rema	rks
2300072-02	3-	6-23	09	10	3	N	/				
COMMENTS:											

			GROI	INDW	CONSULTA ATER SA		G EOD					
DATE:	3.	-6-2		JINDYY	JOB NUI			103198				
PROJECT: Garvey	ر					MBEK:	10	^	4			
WELL ID: RW-3					EVENT:	ъм. На	stings, N		7			
	DOLTO, F	10000	□ REPLA	05#	•	JI4	T		OOD 🗆 RE	DAID#		
LOCK: GOOD GREPLACE		3 6000			_ □ N/A	D DEDI	•			REPAIR (Co	_ □ N/A	
WEATHER CONDITIONS:		1.		OII OAI	т —		-/			KEI AIIV (OU	minent)	
REVIEWED BY:	T	lov.	ay		PERSON	INEL.): }≀ JC	- 0	T			
REVIEWED B1.					PERSON	INCL:	00	- /5				
WELL DIAMETER: 1"	2" 4"				T							
TOTAL DEPTH from TOC	(ft.):				1	V010	V001-					
DEPTH TO NAPL from TO					ANAL	YSIS:	VOC's					
DEPTH TO WATER from T	OC (ft.):				1							
									GRO	JNDWAT	TER SAMP	LING
									START			
									FINISH:			
									VOLUM	E PURGE	D (gal):	
Temperature (C°): pH (units): DRP (mV): Corrected ORP** (mV): Turbidity (NTU): DO* (mg/L): Volume Purged (gal): Depth to Water (ft):											(+/-	(3% pH Uni 10 m\ (10%
Color:											(<0.	.3 Fee
Odor:										1	1024	
							Well	nes D-	v While	Purging		
*DO Range = 0 to 14.6 m	a/l may	ofRer	na/Let 2	5°C		**Corre	ted ORP					
De riange - 0 to 14.0 m	gre, max	01 0.0 1	ng/L at 2	00		Correc	Sted OKP	- Fleid C	JKP + 200	mv		
Sample Data					☐ Bailer	□ Pump	De	scription:	Grab			
	Da	ite	Ti	me	Bottles	Filtere	ed (Y/N)					
Sample ID		d/y)	1	mm)	(to lab)		5 mm)			Remark	s	
2300072-03	3-6	-23	09	15	3		V					
COMMENTS:												
JOHNLINIO.												

0

	3-6-	77	GRO	UNDW	ATER SA			M 03198			
DATE: PROJECT: Garvey	7.0.	. 65			JOB NU	MBER:	20461	103196			
WELL ID: RW-4					EVENT:	ом. На	stings. N	E			
CONDITION OF WELL	BOLTS	S: □ GOOD	□ REPL	ACF#	□ N/A	514.			OD 🗆 RE	PAIR #	□ N/A
LOCK: GOOD GREP					: 🗆 GOOD	□ REPLA				REPAIR (C	
WEATHER CONDITION	NS: C	10rdy			AMBIEN	IT TEMP	:	30	3		
REVIEWED BY:	50				PERSON	INEL:	JC	-13	ナ		
					_						
WELL DIAMETER: 1"	A PARTICIPATION OF THE PARTICI	4"			-						
TOTAL DEPTH from T					ANAI	YSIS:	VOC's				
DEPTH TO NAPL from					-						
DEI III TO WATER III	11) 001 111	.,.		T					GRO	UNDWA	TER S
									START		TLIC
									FINISH		
										IE PURG	ED (gal)
N-SITU TESTING											
Circle one: DEVELO	PMENT	SAMPLING		_	☐ Bailer	□ Pump	De	scription	Bladder		
Time (ham):											
Temperature (C°): pH (units):											
ORP (mV):			/								
Corrected ORP** (mV):									P. 12-63		
Turbidity (NTU):											
DO* (mg/L):											
Volume Purged (gal):							1				
Depth to Water (ft):											
Color:	-								1		
Odor:											
							Well	Goes Dr	y While	Purging	
*DO Range = 0 to 14.	6 mg/L, m	ax of 8.6 n	ng/L at 2	25°C		**Correc	ted ORP	= Field C	RP + 200) mV	
Sample Data					☐ Bailer			scription	Grab		
0		Date (m/d/y)		ime ı:mm)	Bottles (to lab)		d (Y/N) mm)				
Sample ID 23000アン~(-6-23		20	3	(0.43				Remar	KS
75000777	7/ 3	0 43	01	20)		v				
COMMENTS:											
JOHINEHTO.											

DATE: 7	6-23		GROC	NOVA	TER SA		204EM				
PROJECT: Garvey	0	,		_	JOB NU	MBER:	ZUALIV	100130			
WELL ID: RW-5					EVENT:	on: Has	stings. N	F		-	-
CONDITION OF WELL	POLTS.	□ GOOD	TI DEDI A	CF.#	□ N/A				OD 🗆 RE	DAID #	DAW
LOCK: GOOD REPLACE		1 6000			□ GOOD					REPAIR (C	D N/A
WEATHER CONDITIONS:	Tester of the	vely			T	IT TEMP:		015			
REVIEWED BY: J(PERSON		TC	131	-		
					-			13 (
WELL DIAMETER: 1"	2" 4"										
TOTAL DEPTH from TOC	(ft.):				ΔΝΔΙ	YSIS:	VOC's				
DEPTH TO NAPL from TO	C (ft.):				ANA	-1010.	1000				
DEPTH TO WATER from 1	OC (ft.):										
									GRO	UNDWA	TER S
									START	:	
									FINISH		
									VOLUM	E PURG	ED (gal
Circle one: DEVELOPME Time (ham):		SAMPLING									
Temperature (C°):									-		
pH (units): ORP (mV):											
Corrected ORP** (mV):										11	
Turbidity (NTU):											
DO* (mg/L):						/					
Volume Purged (gal):			/		1233		1				
Depth to Water (ft):		/									
Color:	/		LU BE					7	1		
Odor:											
							Well G	oes Dr	y While	Purging	
*DO Range = 0 to 14.6 m	g/L, max	x of 8.6 r	ng/L at 2	5°C		**Correct	ted ORP	= Field C	RP + 200) mV	
Sample Data					☐ Bailer	□ Pump	De	scription:	Grab		
	n	ate	Ti	me	Bottles	Filtere					
		/d/y)		:mm)	(to lab)	(0.45				Remar	ks
Sample ID		5-23	097	25	3	1				rtomai	
Sample ID 2300072-05	3-6					-					
Sample ID 2300072-05	3-6										
	3-6										

			GROI	INDWA	Clean Consulta	MIS	G FORM					
DATE:	.3~	6-23		SINDIN	JOB NU			/03198				_
PROJECT: Garvey					EVENT:	MDLN.	101		1			_
WELL ID: RW-6						on: Ha	stings, N		/			
	BOLTS:	□ GOOD	D REPLA	CF#	□ N/A			DS: □ GO	OD IT RE	PAIR #	□ N/A	
LOCK: GOOD REPLACE					GOOD	□ REPLA		T		REPAIR (C		
WEATHER CONDITIONS:	Clo	vdy			AMBIEN	NT TEMP	:	30	5			
REVIEWED BY:	J	C'			PERSON				31			
WELL DIAMETER: 1" 2	." 4"											_
TOTAL DEPTH from TOC (1							
DEPTH TO NAPL from TOO					ANAI	LYSIS:	VOC's					
DEPTH TO WATER from To					1							
	(1.1.)								GRO	UNDWA	TED S	Δ.Ν.
									START		VIEK 3	AII
									0.0000000000000000000000000000000000000			_
									FINISH	: ME PURG	ED (gal)	
									VOLUM	ile PUNG	ED (gai)	
IN-SITU TESTING					☐ Bailer	C Pump	Do	scription:	Dladder			_
Circle one: DEVELOPMEN Time (ham):	11 8	SAMPLING		Γ	Daner	- rump	1	T	Diaduel			7
Temperature (C°):												+
pH (units):												+
ORP (mV):												(
Corrected ORP** (mV):												+
Turbidity (NTU):												(-
DO* (mg/L):							10-1					+
Volume Purged (gal):				/								+
Depth to Water (ft):			/					-				+
Color:												(
												+
Odor:		-			-				10.00			\perp
										Purging		
*DO Range = 0 to 14.6 mg	g/L, max	x of 8.6 r	ng/L at 2	:5°C		**Correc	ted ORP	= Field O	RP + 200) mV		
Sample Data					☐ Bailer	□ Pump	De	scription:	Grab			
	D	ate	Ti	me	Bottles	Filtere	d (Y/N)					
Sample ID		/d/y)		:mm)	(to lab)		5 mm)			Remar	ks	
2300072-06	3-6	(-23	09	30	3	Λ	/					
COMMENTS												
COMMENTS:							71					_

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				CDOL	INIDIA	Clean		0 F0D						
ŀ	DATE		1 1		MDW	ATER SA			л лоз198					
- I	DATE: PROJECT: Garvey	3-	5-6	>		JOB NUI	MBER:	101						
	WELL ID: RW-7					EVENT:	ъм. На							
- 1	CONDITION OF WELL	BOLTS: II	GOOD	TI REPLA	CF#	□ N/A	314.			SOOD 🗆 R	EDAIR #	□ N/A		
- 1			0000			GOOD			T		REPAIR (_		
Ì	WEATHER CONDITIONS:	Clo	de			AMBIEN			05					
ı	REVIEWED BY:	JC	-			PERSON		JC.	-137					
	WELL DIAMETER: 1"	2" 4"												
	TOTAL DEPTH from TOC	(ft.):					veie.	VOC's						
	DEPTH TO NAPL from TO	C (ft.):					. 1 010.	1000						
L	DEPTH TO WATER from	ID: RW-7 TION OF WELL GOOD GREPLACE GN/A EXPAN THER CONDITIONS: Cloudy EWED BY: DIAMETER: 1" 2" 4" AL DEPTH from TOC (ft.): H TO NAPL from TOC (ft.): H TO WATER from TOC (ft.): TU TESTING one: DEVELOPMENT SAMPLING nam): rature (C°): its): nV): ted ORP** (mV): ity (NTU): g/L): e Purged (gal): to Water (ft): Range = 0 to 14.6 mg/L, max of 8.6 mg/L at					<u> </u>							
										GRO	DUNDWA	ATER S	AMPLI	
- [ATHER CONDITIONS: Cloydy VIEWED BY: TC LL DIAMETER: 1" 2" 4" TAL DEPTH from TOC (ft.): PTH TO NAPL from TOC (ft.): PTH TO WATER from TOC (ft.): PTH TO WATER from TOC (ft.): Orth T								STAR	T:			
										FINISI	н:			
Į										VOLU	ME PURG	ED (gal)):	
-														
r														
- 1	1	NT SA	MPLING	-		☐ Bailer	□ Pump	De	scriptio	n: Bladder	_		/	
- 1	Time (ham):													
ŀ	Temperature (C°):													
- 1	pH (units):												(1 pH	
- 1	ORP (mV):													
ŀ							/						(+/- 10	
- 1	Turbidity (NTU):													
H	DO* (mg/L):							-					(
- 1		2 20							1					
H			/										(<0.3 F	
H	Color:										1			
-	Odor:													
Į	_/_										Purging			
	*DO Range = 0 to 14.6 m	g/L, max	of 8.6 r	ng/L at 2	5°C		**Correc	cted ORP	= Field	ORP + 20	00 mV	100		
	Sample Data					☐ Bailer	□ Pumn	De	scrintio	n: Grab				
1	Sample Data	D.(1			T	ii. Giab				
	Commis ID	(m/d			me :mm)	Bottles (to lab)		ed (Y/N) 5 mm)			_			
-	Sample ID 2300072-07	3-6						V			Rema	rks		
1	2300012-01	3.6	65	093	5)	3		· ·						
-	COMMENTS:													
	Purge water placed in dru	m#									Page _	of		

		(GROU	JNDWA	ATER SA	MPLING	FORM					
ATE: 3	-6-23				JOB NU	MBER:	204EM0	03198				
ROJECT: Garvey					EVENT:							
/ELL ID: RW-8					_	ON: Hast	ings, NE					
ONDITION OF WELL	BOLTS: G	OD DI	REPLA	CE#	□ N/A				OD 🗆 RE	PAIR#	□ N/A	
OCK: GOOD GREPLACE				10.2 a 10.0	GOOD					REPAIR (C		
VEATHER CONDITIONS:	Clou	NV			AMBIEN	IT TEMP:		-		•		
REVIEWED BY:	JC	U y			PERSON	INEL:	JC -	RI				
VELL DIAMETER: 1" 2	" 4"				T							
OTAL DEPTH from TOC (t.):				1		10.01					
DEPTH TO NAPL from TOO					ANAL	YSIS: \	/OC's					
DEPTH TO WATER from TO					1							
									GRO	UNDWA	TER 9	AMPLING
									START		LICO	THE LINE
									FINISH			
										IE PURGI	ED (gall)	
Circle one: DEVELOPMEN ime (ham): emperature (C°):	T SAMP	ING			☐ Bailer	□ Pump	Des	cription:	Bladder			100
												(3%
H (units):												(1 pH Un
RP (mV): orrected ORP** (mV):												
urbidity (NTU):												(+/- 10 m\
					>							
O* (mg/L): olume Purged (gal):												(10%
		-					-					
epth to Water (ft):												(<0.3 Fee
		-										
dor:		-										
									The Control	Purging		_
DO Range = 0 to 14.6 mg	/L, max of 8	.6 mg/	L at 2	5°C		**Correcte	d ORP =	Field O	RP + 200) mV		
Sample Data					☐ Bailer	□ Pump	Des	cription:	Grab			
Sample ID	Date (m/d/y)		(hh:	me :mm)	Bottles (to lab)	Filtered (0.45 n				Remark	ks	
230072-08	3-6-	23 (09	40	3		-					
OMMENTS:												

			Clean	ath ness			
			ATER SA	MPLING FORM	1		
DATE:	3-6-23		JOB NU	MBER: 204EM	103198		
ROJECT: Garvey			EVENT:				
VELL ID: Influent			LOCATIO	ON: Hastings, N	E		
ONDITION OF WELL	BOLTS: GOOD	□ REPLACE #	_ D N/A	BOLLARI	DS: □ GOO	DD I REPAIR#	🗆 N/A
OCK: GOOD GREPLACE	E 🗆 N/A	EXPANSION CAR				OOD REPAIR	₹ (Comment)
WEATHER CONDITIONS:	Cloudy	1	AMBIEN	TTEMP: 3	0'5		
REVIEWED BY:	JC '		PERSON	IT TEMP: 3	-131		
WELL DIAMETER: 1"	2" 4"						
TOTAL DEPTH from TOC	(ft.):		T	Vele. Voc's			
DEPTH TO NAPL from TO	OC (ft.):		ANAL	.YSIS: VOC's			
DEPTH TO WATER from 1							
						GROUNDY	WATER SAMPLING
						START:	
						FINISH:	
						VOLUME PUR	RGED (gal):
Gemperature (C°): OH (units): ORP (mV): Corrected ORP** (mV): Furbidity (NTU): OO* (mg/L): /olume Purged (gal):							(39) (1 pH Un (+/- 10 mV
Depth to Water (ft):							(<0.3 Fee
Color:						1	
Odor:							
						While Purgi	ng 🗆
DO Range = 0 to 14.6 m	ng/L, max of 8.6 r	ng/L at 25°C	☐ Bailer	**Corrected ORP	= Field O		
	Date	Time	Bottles	Filtered (Y/N)			
Sample ID	(m/d/y)	(hh:mm)	(to lab)	(0.45 mm)		Ren	marks
230072-09	3-6-23	0945	3	N		1.	
230072-10	3-6-23	0945	3	N	Dy	olicate	
COMMENTS:							

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			GROL	JNDWA	Clean Consulta		3 FOR	M				
DATE:	3-6	-23			JOB NUI	MBER:	204E	M03198				
PROJECT: Garvey					EVENT:							
WELL ID: Effluent					LOCATION	on: Ha	stings, N	1E				
CONDITION OF WELL	BOLTS:	GOOD	□ REPLA	CE #	□ N/A		BOLLAR	DS: □ G	OOD 🗆 R	EPAIR#_	_ D N/A	
LOCK: GOOD REPLAC				ON CAP:	□ GOOD	□ REPLA				REPAIR (Comment)
WEATHER CONDITIONS:	C/0	idy			AMBIEN	NT TEMP	: '	305 - L				
REVIEWED BY:	JC	-			PERSON	NEL:	JC	-1	3+			
WELL DIAMETER, 4"	2" 4"										-	
WELL DIAMETER: 1"	7.7.7											
TOTAL DEPTH from TOC					ANAL	YSIS:	VOC's					
DEPTH TO NAPL from TO					1							
DEPTH TO WATER HOME	TOC (11.):								Lone	NI INI DIA	TED	ANDI
										DUNDWA	ATER S	AMPL
									STAR			
									FINISI	A A STATE OF THE REAL PROPERTY.		
									VOLU	ME PURG	ED (gal):
IN-SITU TESTING												
Circle one: DEVELOPMI	ENT S	AMPLING			☐ Bailer	☐ Pump	De	escription	n: Bladder			/
Time (ham):												
Temperature (C°):	1											
pH (units):												(1 pH
ORP (mV):												(, p.
Corrected ORP** (mV):												(+/- 10
Turbidity (NTU):					×							
DO* (mg/L):						1						
Volume Purged (gal):									1			
Depth to Water (ft):								1				(<0.3
Color:	/								1			(10.0
Odor:										1		
							Well	Goes D	rv While	Purging	III	
*D6 Range = 0 to 14.6 r	ng/L, max	x of 8.6 n	ng/L at 2	5°C		**Correc			ORP + 20	10 10 10 10 10		
	0 -,		3					1 1014		, o III v		
Sample Data					☐ Bailer	□ Pump	D	escription	n: Grab			
	D	ate	Ti	me	Bottles	Filtere	d (Y/N)					
Sample ID	(m.	/d/y)	(hh:	mm)	(to lab)		mm)			Remai	rks	
2300072-11	3-6	-23	09	50	3	1	/					
-												
COMMENTS:												

			GROI	JNDW4	Clean of the SAI		FORM				
DATE: 03/08/202	2			,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	JOB NUM		204EM				
PROJECT: Garvey	>				EVENT:	1ºt		00.00			
WELL ID: MW-3B							stings, NE	:			
	Inc. 70	10000	□ REPLA	o= "	•			-	OOD 🗆 REF	MD# D	
CONDITION OF WELL LOCK: DOOD DREPLACE		a GOOD			GOOD					EPAIR (Comm	N/A
		\ .	EXPANSI	ON CAP				PAU: LI	3000 LI K	EPAIR (Comm	enty
WEATHER CONDITIONS	: Crox	wy			AMBIEN		36				
REVIEWED BY:					PERSON	NEL:	2 C				
WELL DIAMETER: 1"	2" (4")									
TOTAL DEPTH from TOO	; (ft.):				ANIAL	YSIS:	VOC's				
DEPTH TO NAPL from T	OC (ft.):				ANAL	1010:	VOO3				
DEPTH TO WATER from											
									GROU	INDWATER	RSAMPLING
									START:	081	
									FINISH:		
									-	E PURGED (
IN-SITU TESTING Circle one: DEVELOPM Time (ham):	ENT S	AMPLING	3		□ Bailer	□ Pump	Des	scription	: Bladder		
Temperature (C°):	1										(3%
pH (units):		/									(1 pH Uni
ORP (mV):											
Corrected ORP** (mV):					1						(+/- 10 m\
Turbidity (NTU):					>						
DO* (mg/L):											(10%
Volume Purged (gal):			/					-			
Depth to Water (ft):											(<0.3 Fee
Color:	/										
Odor:											
							Well G	oes Dr	y While F	Purging 🗆	
*D6 Range = 0 to 14.6	mg/L. max	c of 8.6	mg/L at 2	5°C		**Correc			ORP + 200		
	3-,					001100		11014	2111 - 200		
Sample Data					☐ Bailer	□ Pump	Des	scription	: PDB		
		ate		me	Bottles		d (Y/N)				
Sample ID		/d/y)		:mm)	(to lab)		mm)			Remarks	
2300072-19	03/08	123	08:	. 19	3	N					
COMMENTS:											

			GROU	JNDWA	TER SA	MPLING	FORM					
DATE:					JOB NUM	MBER:	204EM	03198				
PROJECT: Garvey					EVENT:							
WELL ID: MW-4A					LOCATIO	N: Has	stings, NI	E				
CONDITION OF WELL	BOLTS:	GOOD	□ REPLA	CE #	□ N/A		BOLLARI	os : □ GC	OOD 🗆 RE	PAIR#_	_ D N/A	
OCK: GOOD GREPLAG	CE O N/A		EXPANS	ON CAP:	□ GOOD	□ REPLA	CE	PAD: 🗆 (GOOD 🗆	REPAIR (C	Comment)	
WEATHER CONDITIONS	:				AMBIEN	T TEMP:						
REVIEWED BY:					PERSON	NEL:						
WELL DIAMETER: 1"	2" 4"											
TOTAL DEPTH from TOO	C (ft.):				ANAL	YSIS:	VOC's					
DEPTH TO NAPL from T	OC (ft.):				ANAL	. 1 010.	1000					
DEPTH TO WATER from	TOC (ft.):											
									GRO	UNDWA	TER S	AMPLING
									START	•		
									FINISH	l:		
									VOLUM	ME PURG	ED (gal)	:
Time (ham): Temperature (C°): pH (units): ORP (mV): Corrected ORP** (mV): Turbidity (NTU):					<u> </u>							(3 ¹ (1 pH Ur (+/- 10 m
DO* (mg/L):												(109
Volume Purged (gal):			/									
Depth to Water (ft):												(<0.3 Fee
Color:	/								1			
Odor:	1											
							Well G	oes Dr	y While	Purging		
*DO Range = 0 to 14.6	mg/L, max	k of 8.6	mg/L at 2	25°C		**Correc	ted ORP	= Field C	ORP + 20	0 mV		
Sample Data	D	ate	т	ime	□ Bailer		De d (Y/N)	scription	n: PDB			
Sample ID	(m	/d/y)	(hh	:mm)	(to lab)	(0.45	i mm)			Rema	rks	
COMMENTS: NO S	ample	(r	bua	ter)								

		4	Clean	nth NYS			
		GROUND		MPLING FORM	Λ		
DATE: 93/08/202	.3		JOB NUM	MBER: 204EN	M03198		
PROJECT: Garvey			EVENT:	l of a	1		
WELL ID: MW-4B			LOCATIO	ON: Hastings, N	IE		
CONDITION OF WELL	BOLTS: E GOOD	☐ REPLACE #	□ N/A	BOLLAR	DS: 12 GOOD II R	EPAIR#	N/A
LOCK: GOOD REPLACE			AP: 🗹 GOOD		PAD: GOOD		
WEATHER CONDITIONS:	cloudy		AMBIEN	IT TEMP: 37			
REVIEWED BY:			PERSON		J C		
WELL DIAMETER: 1" (2	4"						
TOTAL DEPTH from TOC (V001-			
DEPTH TO NAPL from TO			- ANAL	YSIS: VOC's			
DEPTH TO WATER from To							
					GRO	UNDWATE	R SAMPLING
						T: 0852	
						H: 0852	
						ME PURGED (
Circle one: DEVELOPMENTIME (ham):	T SAMPLIN	G	☐ Bailer	□ Pump De	escription: Bladder		/
Temperature (C°):							(00
pH (units):							(3°
ORP (mV):							(1 ph of
Corrected ORP** (mV):							(+/- 10 m
Turbidity (NTU):							(17- 10 111
DO* (mg/L):							(10
Volume Purged (gal):							(10
Depth to Water (ft):							(<0.3 Fe
Color:							(10.01 6
Odor:							
				Well	Goes Dry While	Purging	
*DO Range = 0 to 14.6 m	g/L. max of 8.6	mg/L at 25°C	1000		= Field ORP + 20		
,	9-1			001100100 0111	11010 0111 21		
Sample Data			☐ Bailer	□ Pump D	escription: PDB		
	Date	Time	Bottles	Filtered (Y/N)			
Sample ID	(m/d/y)	(hh:mm)		(0.45 mm)		Remarks	
2300072-23	03/08/23	0852	3	N			
23 00072-24	03/08/123	0852	3	17	Duglica-	re	
COMMENTS:					1		

Purge water placed in drum#_

Page __ of __

		1	Clean	this series					
		GROUNDW	ATER SA	MPLING FORM					
DATE: 03/09/5	223		JOB NUM	MBER: 204EM	03198				
PROJECT: Garvey			EVENT:	1044					
WELL ID: MW-5A				N: Hastings, NI	E				
CONDITION OF WELL	BOLTS: E GOOD	□ REPLACE #	□ N/A	BOLLARD	7	OD 🗆 RE	PAIR#	□ N/A	
LOCK: GOOD DREPLACE		EXPANSION CAR			- 4		REPAIR (C		
WEATHER CONDITIONS:	Cloudy		AMBIEN	ттемр: 31					
REVIEWED BY:	/		PERSON		ic				
WELL DIAMETER: 1" \	2") 4"								
TOTAL DEPTH from TOC	(ft.):		ANIAI	YSIS: VOC's					
DEPTH TO NAPL from TO	C (ft.):		ANAL	100. 1000					
DEPTH TO WATER from 1	roc (ft.):								
						GRO	UNDWA	TER S	AMPLING
						START	: 09	13	
						FINISH	: 09	13	
						VOLUM	IE PURG	ED (gal):	
Circle one: DEVELOPME Time (ham):	NT SAMPLING								
Temperature (C°):									(3%
pH (units):									(1 pH Unit
ORP (mV):			2						
Corrected ORP** (mV):									(+/- 10 mV
Turbidity (NTU):									
DO* (mg/L):									(10%
Volume Purged (gal): Depth to Water (ft):					-				
Color:					9				(<0.3 Fee
Odor:									
oudi.				Wall G	ooe Dn	, While	Purging		
*DO Range = 0 to 14.6 m	adl may of 9.6	ma/l at 25°C				400 -		П	1
DC-Narige - 0 to 14.0 ii	ig/L, iliax of 6.0	ing/L at 25 C		**Corrected ORP	= Fleid O	RP + 200	mv		
Sample Data			☐ Bailer	□ Pump Des	scription:	PDB			
Campio Data	Date	Time	Bottles	Filtered (Y/N)					
Sample ID	(m/d/y)	(hh:mm)	(to lab)	(0.45 mm)			Remar	·ke	
2300072-25	03/08/23	0913	3	N			IXCIIIai	No	
		1.5							
COMMENTS:	-	-							

		GROUNDWA	Clean Po	MPLING FORM	1			
DATE: 03/98/20	23		JOB NUM		103198			
PROJECT: Garvey			EVENT:	1.FU				
WELL ID: MW-5B				N: Hastings, N	E			
CONDITION OF WELL	BOLTS: E GOOD		□ N/A			DD 🗆 REPAIR #	₽ □ N/A	
LOCK: O GOOD REPLACE		EXPANSION CAP: {				OOD REPAIR		
WEATHER CONDITIONS:		LAT ANGION CAF.		T TEMP: 37	I AD. EI O	OOD LIKEI AII	((Comment	,
REVIEWED BY:	Clare			NEL: CC T	· F.			
KEVIEWED DT.			PERSON	NCL.		-		
WELL DIAMETER: 1" (2" (4")							
TOTAL DEPTH from TOC								
			ANAL	YSIS: VOC's				
DEPTH TO NAPL from TO DEPTH TO WATER from								
DEP III TO WATER HOIII	100 (11.).					GROUND	MATER	AMDI INC
								AWIPLING
						START: 09		
						FINISH: 9°		
						VOLUME PU	KGED (gai):
IN-SITU TESTING								
Circle one: DEVELOPME	NT SAMPLING		☐ Bailer [☐ Pump De	scription:	Bladder		
Time (ham):								
Temperature (C°):								(3%
pH (units):								(1 pH Uni
ORP (mV):								
Corrected ORP** (mV):								(+/- 10 m\
Turbidity (NTU):			\times					
DO* (mg/L):								(10%
Volume Purged (gal):								
Depth to Water (ft):								(<0.3 Fee
Color:								
Odor:								
				Well C	oes Dry	While Purg	ing 🗆	
*DO Range = 0 to 14.6 n	ng/L, max of 8.6 m	g/L at 25°C		**Corrected ORP				1
Sample Data			☐ Bailer	□ Pump De	scription:	PDB		
•	Date	Time	Bottles	Filtered (Y/N)				
Sample ID	(m/d/y)	(hh:mm)		(0.45 mm)		Por	narks	
2300072-26	03/06/23	0922 3	13 M	N	ms	/msi)	IIdinə	
2300072-21	63/08/23		3	N	Da	5 145 D	Sc	3/8
COMMENTS:								

			GROI	JNDW	Clean CA		FORM					
DATE: 63/08/2023					JOB NUI		204EM					
PROJECT: Garvey					EVENT:	106						
WELL ID: MW-6A						ON: Has		E				
CONDITION OF WELL	BOLTS:	ra GOOD	□ REPLA	CF#	□ N/A			,	OOD 🗆 RE	PAIR #	□ N/A	
LOCK: GOOD REPLAC					: o GOOD				GOOD [-
WEATHER CONDITIONS	· Clou	dy			T	IT TEMP:	- 1			•		,
REVIEWED BY:					PERSON	3 4 5 4 5	50	CC				
					1							
WELL DIAMETER: 1"	2" 4"											
TOTAL DEPTH from TOO					1		10.01					
DEPTH TO NAPL from To					ANAL	YSIS: \	VUC's					
DEPTH TO WATER from												
									GRO	UNDW	ATER S	SAMPLING
										: 08		
									FINISH			
										ME PURG):
Circle one: DEVELOPM Time (ham): Temperature (C°): pH (units):	ENT S	SAMPLIN	G		☐ Bailer	□ Pump	Des	scription	Bladder			(3% (1 pH Uni
ORP (mV):			1									(, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
Corrected ORP** (mV):					1							(+/- 10 m\
Turbidity (NTU):												
DO* (mg/L):												(10%
Volume Purged (gal):			/					1				
Depth to Water (ft):								-				(<0.3 Fee
Color:	/											
Odor:												
							Well G	oes Dr	y While	Purging		
*DO Range = 0 to 14.6 i	ng/L, max	x of 8.6	mg/L at 2	5°C		**Correcte	ed ORP	= Field C	RP + 200) mV		
Sample Data					☐ Bailer	□ Pump	Des	cription	: PDB			
Sample ID		ate /d/y)		me :mm)	Bottles (to lab)	Filtered				Rema	rko	
2300072-18	03/09		08:		3	. X				Kema	149	
		,	200	7 7								
COMMENTS:												
COMMENTS:												

			GROL	JNDWA	TER SA	MPLING	G FORM	1			
DATE: 3-7-23					JOB NUI	MBER:	204EN	103198			
PROJECT: Garvey					EVENT:		of				
WELL ID: MW-19A					LOCATION	ON: Ha	stings, N	E			
	BOLTS: [GOOD	□ REPLA	CE #	DHN/A		BOLLAR	DS: DGC	OOD REPA	IR# 🗆 N	/Α
LOCK: Ø GOOD ☐ REPLACE					□GOOD	□ REPLA	CE	PAD: Ø	GOOD I REF	PAIR (Comme	nt)
WEATHER CONDITIONS:	C/2.	dy, V	vindy		AMBIEN	IT TEMP		2			
REVIEWED BY:					PERSON	INEL:	JC	-B	T		
	0										
	2" (4")	/									
TOTAL DEPTH from TOC	-	N	<u>A</u>		ANAL	YSIS:	VOC's				
DEPTH TO NAPL from TO	,	N/	<u>A</u>								
DEPTH TO WATER from 1	OC (ft.):	NI	4						I		2 1 2 1 2 1 1
										DWATER	
									START:	162	
									FINISH:	162	
									VOLUME	PURGED (ga	11):
Circle one: DEVELOPME	_	AMPLING	<u> </u>		□ Bailer	Pump	De	scription	: Bladder		
Time (ham):		1600									
Temperature (C°):					10.24						
pH (units):	THE RESERVE OF THE PERSON NAMED IN	7,29	1-3-2	THE RESERVE TO A SECOND	The second second						(1 pH l
ORP (mV):		-3.1									
Corrected ORP** (mV):		196.9									(+/- 10
Turbidity (NTU):		0,46									
DO* (mg/L):	Section of the Section Section 1	6,66	Sent transfer the sent of								(1
Volume Purged (gat)?"/m,h	250	250	250	250	250					4	10000
Depth to Water (ft):	- 1	- 1	-1-	1							(<0.3 F
Color:					clr	100,00					4
Cond. mS/cm:	0,848	0,881	0.896	0.901	0,901		1A/- 11 -		. 14/1-11 - 5		
*DO D 01 11 5		16.0		F10					y While Pu		
*DO Range = 0 to 14.6 m	g/L, max	of 8.6 n	ng/L at 2	5°C		**Correc	ted ORP	= Field C	ORP + 200 m	V	
Samula Data					☐ Bailer	m/p		a a el e 41 -	. Dladd		
Sample Data					100			scription	. bladder		
01- 15		ate (d/y)		me :mm)	Bottles (to lab)		d (Y/N) mm)				
Sample ID 2300072-15		-23	,		3	(0.45			F	Remarks	
2300072-13	5-7	- 23	162	.0	5						
COMMENTS:											

7 1			GROU	JNDWA	IER SA	WIPLING				
DATE: 3-7	-23				JOB NU	MBER:	204EM03			
PROJECT: Garvey					EVENT:	/		4		
WELL ID: MW-20A					LOCATI	- T	stings, NE	,		
		GOOD	□ REPLA	CE #	tì⁄N/A			GOOD I REPA		_
LOCK: GOOD REPLACE			EXPANS	ION CAP:	GOOD	□ REPLA	CE PAI	D: to GOOD I RE	PAIR (Comment	1)
WEATHER CONDITIONS:		dy			AMBIEN	IT TEMP:				
REVIEWED BY:	JC			-	PERSON	NEL:	JC -	BT		
WELL DIAMETER: 1"	2" 4")								
TOTAL DEPTH from TOC	(ft.):		NA			YSIS:	VOC's			
DEPTH TO NAPL from TO	C (ft.):	,	N/A		ANAI	-1010:	VOO 5			
DEPTH TO WATER from T	OC (ft.):	J	V/A							
								GROUI	NDWATER S	SAMI
								START:	1530	
V _b								FINISH:	1530	
								VOLUME	PURGED (gal):
pH (units): ORP (mV): Corrected ORP** (mV): Turbidity (NTU): DO* (mg/L):	6,39 -5,3 194,7 3,53	6.34 -3,3 196.7 2,78	6.72 -5.1 1949 2,75	9,42 6,71 -16,0 184,0 1,23 0,29	6,79 -21,8 1782 0,71	6.88 -23.9 0.32				(+/-
Volume Purged (gdl): m//mm										
Depth to Water (ft):	200	250	2,0	230	250	250				(<(
Color:	cla	clr	ch	clr	e.15	clr				100
Cond. mS/cm:				0,850						
	. 0, 0	0.0.0		733		0,077	Well Goe	s Dry While Pu	urging	
*DO Range = 0 to 14.6 m	g/L, max	of 8.6 r	ng/L at 2	5°C		**Correct		ield ORP + 200 n		
Sample Data					☐ Bailer	Pump	Descri	ption: Bladder		
		ate		me	Bottles	Filtered				
Sample ID		(d/y)		:mm)	(to lab)	(0.45	mm)		Remarks	
2300072-14	3-1	7-23	153	30	3	N				

				AWONE	IER SA	MPLING	100 - 110				
DATE:	3-	7-2	3		JOB NUI	MBER:		103198			
PROJECT: Garvey					EVENT:		of	4			
WELL ID: MW-30A					7	ON: Has					
CONDITION OF WELL		GOOD	□ REPLA		₪ N/A				DD 🗆 REP		□ N/A
LOCK: ID GOOD I REPLACE						□ REPLAC			OOD 🗆 RI	EPAIR (Cor	mment)
WEATHER CONDITIONS:		lovdy	wine	dy		IT TEMP:		2_			
REVIEWED BY:	JC				PERSON	INEL:	JC	B	/		
WELL DIAMETER: 1"	2" 4")									
TOTAL DEPTH from TOC	(ft.):	~	/A		ΔΝΔΙ	YSIS: \	VOC's				
DEPTH TO NAPL from TO	C (ft.):	N	/ A		7111711	-1010.					
DEPTH TO WATER from T	OC (ft.):	/	V/A								
			<u></u>						GROU	NDWAT	ER SAMPL
									START:	12.	50
									FINISH:	125	50
									VOLUME	PURGE	D (gal):
Circle one: DEVELOPMEI Time (ham):	1220	1225	1230	1235	□ Bailer			scription:		Т	
Time (ham):	1220	1225	1230	1235	1240	1245					
Temperature (C°):	9.01	9,55		9.80							
pH (units):	6,89		7.31	100 A 100 A 100 A	7,38						(1 pł
ORP (mV):	-1,0	2,3	4.6		10.3						
Corrected ORP** (mV):	1998			208,0							(+/- 1
Turbidity (NTU):	203		0,54								
DO* (mg/L):		11.09	7	12.58							
Volume Purged (gat): m//mh	200	200	200	200	200	200					
Depth to Water (ft):				- 1		,					(<0.3
Color:			cir								
Cond. mS/cm:	0,756	0,776	0.787	0,786	0.737	0.789					
										urging [
*DO Range = 0 to 14.6 m	g/L, max	c of 8.6 r	ng/L at 2	.5°C		**Correcte	ed ORP	= Field O	RP + 200	mV	
						_/					
Sample Data					☐ Bailer			scription:	Bladder		
		ate		me me	Bottles	Filtered					
Sample ID		ldly)		:mm)	(to lab)	(0.45				Remarks	S
2300072-13	3-1	23	125	50	3	N					

PROJECT: Garvey WELL ID: MW-31A	en 1	7-2	2-3				JOB NU	MRED.	204EN	103198			-
1111111111							EVENT:	MDEK:	101	4			
								on: Ha	stings, N				
CONDITION OF WELL	Bo	OLTS:	MGC	OOD	□ REPLA	CF#	D N/A			-	OD 🗆 REP	AIR# []	N/A
LOCK: ∰GOOD □ REPLAC			T									EPAIR (Comr	
WEATHER CONDITIONS:		0/0	100	ly				IT TEMP		37			
REVIEWED BY:	-	TC		/			PERSO		TC:	- B7	_		
WELL DIAMETER: 1"	2"	(4")										9
TOTAL DEPTH from TOC	(ft.	.):		N	/A		ANA	YSIS:	VOC's				
DEPTH TO NAPL from TO)C ((ft.):	,	NI	A			-1010.	,,,,,				
DEPTH TO WATER from	тос	C (ft.):		1	V/A								
	\perp										GROU	NDWATE	R SAM
	\perp										START:	420	12
	\perp										FINISH:		12
	上										VOLUME	PURGED	(gal):
ORP (mV): Corrected ORP** (mV): Turbidity (NTU): DO* (mg/L): Volume Purged-(gal): m//m, i	0.	36	0.	p.7 74		175,4	-23.8 176.2 1.17	174,5 0,86 1,04	-30,5 169,5 0,73 0,99	-31,9 [68,] 0.03			(+
Depth to Water (ft):	\perp	_		1									(<
				1	clr	CIr	clr		ch				
Color:	T	-	100	141		10.975	nadt	0.991	0.911	0 900			- 1
	0	157	YE	100	0,5/1	01/13	0,793	07707				urging 🗆	

			Clean	th urs			
		GROUNDWA	ATER SA	MPLING FORM			
DATE: 03/08/20	23		JOB NUI	MBER: 204EM	03198		
PROJECT: Garvey			EVENT:	10871	90		
WELL ID: MW-47B			LOCATIO	N: Hastings, N	E		
CONDITION OF WELL	BOLTS: E GOOD	☐ REPLACE #	□ N/A	BOLLARI	S: d GOOD D	REPAIR #	_ D N/A
LOCK: GOOD IREPLAC		EXPANSION CAP	: ₫ GOOD			☐ REPAIR (Co	omment)
WEATHER CONDITIONS:	Cloudy		AMBIEN	TTEMP: 37			
REVIEWED BY:				NEL: CC J	C		
WELL DIAMETER: 1" (2" 4"						
TOTAL DEPTH from TOC	(ft.):		٦ ,,,,,	YSIS: VOC's			
DEPTH TO NAPL from TO	DC (ft.):		ANAL	YSIS: VOCS			
DEPTH TO WATER from							
					G	ROUNDWA	TER SAMPLING
					STA	ART: 083	34
					FIN	ISH: 08	34
					voi	LUME PURGE	
IN-SITU TESTING							
Circle one: DEVELOPMI	ENT SAMPLING		☐ Bailer	☐ Pump De:	scription: Blad	der	
Time (ham):							
Temperature (C°):							(3%
pH (units):							(1 pH Uni
ORP (mV):							
Corrected ORP** (mV):							(+/- 10 m\
Turbidity (NTU):							
DO* (mg/L):							(10%
Volume Purged (gal):				/	/		
Depth to Water (ft):							(<0.3 Fee
Color:							
Odor:							
				Well G	oes Dry Wh	ile Purging	
*DO Range = 0 to 14.6 r	ng/L, max of 8.6 m	ng/L at 25°C	. #	**Corrected ORP	= Field ORP +	200 mV	
Sample Data			☐ Bailer	□ Pump De	scription: PDB		
	Date	Time	Bottles	Filtered (Y/N)			
Sample ID	(m/d/y)	(hh:mm)	(to lab)	(0.45 mm)		Remark	(S
2300072-21	03/08/23	0934	3	N			
COMMENTS:							

		1	Clear	oth Nys				
		GROUNDWA	TER SA	MPLING FOR	RM			
DATE: 03/09/201	.3		JOB NU	MBER: 2041	EM03198			
PROJECT: Garvey			EVENT:	1 of 4				
WELL ID: MW-48B			LOCATI	ON: Hastings,	, NE			
CONDITION OF WELL	BOLTS: S GOOD	□ REPLACE #	□ N/A	BOLLA	ARDS: GO	OD 🗆 REF	PAIR# 🗆 N	N/A
LOCK: GOOD DREPLAC	E 🗆 N/A	EXPANSION CAP:	⊠′GOOD	□ REPLACE	PAD: Ø G	OOD 🗆 R	REPAIR (Comm	ent)
WEATHER CONDITIONS:	cloudy		AMBIEN	NT TEMP: 3	7			
REVIEWED BY:			PERSON	NEL: Coly	Cruter/	Zerem	winh Cons	ins
WELL DIAMETER: 1"	2") 4"							7
TOTAL DEPTH from TOC	(ft.):		1 ,,,,,	VOICE VOC	•			
DEPTH TO NAPL from TO			ANAL	YSIS: VOC'	5			
DEPTH TO WATER from	TOC (ft.):							
						GROL	JNDWATER	SAMPLING
							0.745	
						FINISH:	27. 27. 7	
							E PURGED (g	
Circle one: DEVELOPME Time (ham):	ENT SAMPLING		□ Bailer	□ Pump	Description:	Bladder		
Temperature (C°):								(3%)
pH (units):								(1 pH Unit
ORP (mV):								
Corrected ORP** (mV):								(+/- 10 mV
Turbidity (NTU):								
DO* (mg/L):								(10%)
Volume Purged (gal):					1			
Depth to Water (ft):								(<0.3 Feet
Color:								
Odor:								
				Wel	I Goes Dry	While F	Purging	
*DO Range = 0 to 14.6 n	ng/L, max of 8.6 i	mg/L at 25°C		**Corrected OR	RP = Field O	RP + 200	mV	
Sample Data			☐ Bailer	□ Pump	Description:	PDB		
	Date	Time	Bottles	Filtered (Y/N)			
Sample ID	(m/d/y)	(hh:mm)	(to lab)	(0.45 mm)			Remarks	
	03/08/2027	0745	3	N				
2300072-16								
2300072-16	03/08/2013	074560		Asc				
	03/08/2023		P /23	N				

		GROUNDW	Clear Consulta		RM			
DATE: 03/99/2023			JOB NUI		EM031	198		
PROJECT: Garvey			EVENT:	1 of L	1			
WELL ID: MW-49B				ON: Hasting	, NE			
CONDITION OF WELL	BOLTS: GOOD	D REPLACE #	□ N/A			GOOD II REP	AIR#	N/A
LOCK: 13 GOOD REPLAC		EXPANSION CAP				GOOD DR		
WEATHER CONDITIONS	Cloudy		1		7			
REVIEWED BY:	0,00		PERSON		c 5	iL		
WELL DIAMETER: 1"	2" 4"		T					
TOTAL DEPTH from TOO	: (ft.):		٦	vaia V00	1-			
DEPTH TO NAPL from To			ANAL	YSIS: VOC	S			
DEPTH TO WATER from			1					
						GROU	NDWATER	SAMPLING
						START:	082	.5
						FINISH:	08	25
						VOLUME	E PURGED (gal):
Circle one: DEVELOPM Time (ham): Temperature (C°): pH (units):	ENT SAMPLIN	G	☐ Bailer	L Pump	Descrip	otion: Bladder		(3% (1 pH Uni
ORP (mV):								(1 pi i o i ii
Corrected ORP** (mV):								(+/- 10 m\
Turbidity (NTU):			X					
DO* (mg/L):								(10%
Volume Purged (gal):								
Depth to Water (ft):								(<0.3 Fee
Color:								
Odor:								
				We	II Goes	s Dry While P	urging 🗆	
*DO Range = 0 to 14.6 r	ng/L, max of 8.6	mg/L at 25°C		**Corrected C	RP = Fie	eld ORP + 200	mV	
Sample Data			☐ Bailer	□ Pump	Descrip	ption: PDB		
Sample ID	Date (m/d/y)	Time (hh:mm)	Bottles (to lab)	Filtered (Y/ (0.45 mm)	N)		Remarks	
230 0072-20	3	N						
COMMENTS:								
COMMENTO.								

			Clean	ath ness			
		GROUNDW	ATER SA	MPLING FORM	1		
DATE: 03/09/20	23		JOB NUI	MBER: 204EM	103198		
PROJECT: Garvey			EVENT:	1084			
WELL ID: MW-50B			LOCATIO	ON: Hastings, N	E		
CONDITION OF WELL	BOLTS: 1 GOO	D 🗆 REPLACE #	□ N/A	BOLLARI	os: d GOOD II R	EPAIR# [⊒ N/A
LOCK: GOOD TREPLAC		EXPANSION CAR	e: 🗹 GOOD		PAD: 1 GOOD		iment)
WEATHER CONDITIONS	Cloudy		AMBIEN	IT TEMP: 3			
REVIEWED BY:			PERSON	Carlotte and the second	つし		
WELL DIAMETER: 1" (2") 4"						
TOTAL DEPTH from TOO			٦	1/00/			
DEPTH TO NAPL from To			ANAL	YSIS: VOC's			
DEPTH TO WATER from							
	1				GPC	HINDWATE	R SAMPLING
					STAR	-	
						1: 084	
-						ME PURGED	
					11020	IIIL I GITOLD	(gui).
Circle one: BEVELOPM Time (ham):	ENT SAMPLI	NG	☐ Bailer	□ Pump De	scription: Bladder		
Temperature (C°):							(3%
pH (units):							(1 pH Uni
ORP (mV):							(T pri on
Corrected ORP** (mV):							(+/- 10 m\
Turbidity (NTU):			1				(./- 10 111
DO* (mg/L):							(10%
Volume Purged (gal):							(107
Depth to Water (ft):							(<0.3 Fee
Color:				Carroll Control			(<0.51 ee
Odor:							
				Well C	ll Soes Dry While	Puraina D	
*D6 Range = 0 to 14.6 r	ma/l may of 8 f	S mg/L at 25°C		**Corrected ORP			
10 11ange - 0 to 14.01	ng/L, max or o.c	Tillg/L at 20 C		Corrected ORP	- Field ORP + 20	JU IIIV	
Sample Data			☐ Bailer	□ Pump De	scription: PDB		
	Date	Time	Bottles	Filtered (Y/N)			
Sample ID	(to lab)	(0.45 mm)		Remarks			
	03/08/23	0843	3	X			
2300072-22							
2300072-22							
23000:12-22							

					Clean	nth NYS						
			GRO	UNDW	ATER SA	MPLIN	G FOR	М				
DATE: 93/08/2023					JOB NUI	MBER:	204EI	M03198				
PROJECT: Garvey					EVENT:	lof	4					
WELL ID: MW-51B					LOCATIO	ON: Ha	stings, N	1E				
CONDITION OF WELL	BOLTS:	GOOD	□ REPLA	ACE#	□ N/A		BOLLAR	DS: E GC	OOD 🗆 RE	PAIR# [J N/A	
LOCK: GOOD REPLACE					: 🗹 GOOD	□ REPLA				REPAIR (Com		
WEATHER CONDITIONS	: 61000) 4			AMBIEN	IT TEMP	: 37					
REVIEWED BY:					PERSON			J C				
WELL DIAMETER: 1"	(2") 4"											
TOTAL DEPTH from TO	C (ft.):				T ANIAL	veic.	VOC's					
DEPTH TO NAPL from T					ANAL	.YSIS:	VOUS					
DEPTH TO WATER from												
									GRO	JNDWATE	RSA	MPLING
										07:5		
										Q7:5"		
										E PURGED		
IN SITU TESTING					□ Poller	D Busses			. District			
Circle one: DEVELOPM Time (ham):	ENT S	SAMPLING	; 	Т	☐ Bailer	□ Pump	1	scription	Bladder			
Temperature (C°):												
pH (units):												(3%
ORP (mV):												(1 pH Uni
Corrected ORP** (mV):										A 15 16		
Turbidity (NTU):												(+/- 10 m\
DO* (mg/L):												
Volume Purged (gal):					1							(10%
Depth to Water (ft):					-							
Color:												(<0.3 Fee
Odor:												
	1						Well	Goes Dr	y While I	Purging		
*DO Range = 0 to 14.6	ma/l ma	v of 8 6 r	na/Lat 3	25°C		**Corros			RP + 200			1
	ng/E, ma	X 01 0.0 1	ng/L at z	.00						mv		
Sample Data					☐ Bailer			scription	PDB			
Committe UD		ate /d/y)		ime :mm)	Bottles (to lab)		d (Y/N) mm)			Remarks		
Sample ID	03/08	123	07:	57	3	N						
2300072-17												
-												

										RATION F			
Site USEP Source	A MEW				Make	4	51	Mode	35	Seria	1 #		
		m _	Field			_	_Enviro	nmental	Instru	ments _	_Pine		
Clean / good				Yes			Ot	hers:					
Batteries in g Generally Fur				Yes Yes	No								
Sensors in go				1 Yes									4 - 1
ochoors in ge	ou snape				Oxygen	Ci	alibra	tion and	d Che	eck			
	Fleva	tion of								- / -			
	Barometr							x 2		=			mm of Hg
Barometric P	ressure S	ource											
Correcte	d Barome	tric Pre	ssure		(Station's	s B	P in m	mHg)–[2.	5 * (9	Site Elevation /10 ter ding	in ft.	/100))]
	(if require	d for m	neter)		_mm/Hg :	= _	//	[2	.5 * (_	/10	00)]		
Date			mp		(Table	e be	mg/i elow)		Rea	ter dina	,		0.3 mg/l alibrate
&Time			C										
		Ad	dition	nal Diss	colved O	κyg	gen Ca	libration	n and	Check			
	Baromet	ic Pre	ssure			In	ches of	Hg 2	X 25.4	=		mn	n of Hg
	ed Barome									Site Elevation			
Date	(if require	d for n	neter) Tem		Calc	_m	m/Hg =			- [2.5 * (_/100	0.3 mg/l
Time			p C		(Table	e b	elow)		Rea	eter ding		rec	alibrate
C Mg/I	l C	Mg	/1	J &	DO in Mg/l	l at	Given To	emps Mg/I	1 %			° I	Mg/I
0 14.621	7		139	14	10.306	-	21	8.915	28		+	35	6.950
1 14.216	8	11.	843	15	10.084	ł	22	8.743	29	1000	┨┝	36	6.837
2 13.829	9	11.	559	16	9.870	1	23	8.578	30	7.559	+	37	6.727
3 13.460	10	11.	288	17	9.665	1	24	8.418	31	7.430	1 -	38	6.620
4 13.107	11	11.	027	18	9.467	Ì	25	8.263	32	7.305	1	39	6.515
5 12.770	12	10.	777	19	9.276	Ì	26	8.113	33	7.183			
6 12.447	13		537	20	9.092		27	7.968	34				
	ORP Ag	AgCl V	olts = 0 .	231 + 0.0	013 (25 - C°) N	ote: Mo	st meter rea	d in mil	ivolts mv=Volts	x1000		
Sensor	Time:		Stan		ne Prob			Time:		Time		Pas	·c
ochion	"""		(s) V		Source		OC.	Time:	00	Time: //	12		ibration
	Open A	ir			4-6			Pre Calibrat	ion	Post Calibration	•	(Y/	N)
-11			7.10	2.4				3.7		1,			115
pН		Su	/	, ,				2.1	≠ Su	7,0	Su	1	12)
ORP		mV		~				44.4	mV		mV		
-Spec.Cond		mS/cm	1.4	07				0,917	mS/cm	1.407	nS/cm)	105
DO		Mg/L							Mg/L		Mg/L		
TDS		g/L							g/L		g/L		
Turbidity		NTU	10	00				790.	FNTU		NTU		N
Temp.		•c							°C		°C		
					Additi	on	al Che	cks					
					1								
Signature	1/	1	1:-	7 4	Drint >	>	1	TP	1	Dat	3	7	77

Field Instruments Used Garvey Elevator Federal Superfund Site Hastings Nebraska

Instrument	Туре	Make	Model #	Serial #
Multi Paramerter Meter	75h	ISY	58m 955	115103242
Turbidity Meter	HFS. ientific	M; cootpu	7,000	700003034
Controller	Solinst Pump Control Unit	Solinst	nnh	250 ECU5629
IF Probe	Solinst Interface Meter	501inst	122	56578

3/4/23 50 3/8/23

Date:

Attachment 1b: EPA eField Sheets and Chain of Custody Forms for WOs 2300072 & 2300073



SampleID SampleName	SampleAlias Matrix	SampledBegin	SampledEnd	SampledBy	BegDepth	EndDepth	DepthUnits	Latitude	Longitude	SampleComments Gradient
2300072-01 Water sample	RW-1 Water	3/6/2023 8:55	3/6/2023 8:5	5 Jeremiah Cousins						Triple Volume MS/MSD
2300072-02 Water sample	RW-2 Water	3/6/2023 9:10	3/6/2023 9:1	0 Jeremiah Cousins						
2300072-03 Water sample	RW-3 Water	3/6/2023 9:15	3/6/2023 9:1	5 Jeremiah Cousins						
2300072-04 Water sample	RW-4 Water	3/6/2023 9:20	3/6/2023 9:2	0 Jeremiah Cousins						
2300072-05 Water sample	RW-5 Water	3/6/2023 9:25	3/6/2023 9:2	5 Jeremiah Cousins						
2300072-06 Water sample	RW-6 Water	3/6/2023 9:30	3/6/2023 9:3	O Jeremiah Cousins						
2300072-07 Water sample	RW-7 Water	3/6/2023 9:35	3/6/2023 9:3	5 Jeremiah Cousins						
2300072-08 Water sample	RW-8 Water	3/6/2023 9:40	3/6/2023 9:4	0 Jeremiah Cousins						
2300072-09 Water sample	Influent Water	3/6/2023 9:45	3/6/2023 9:4	5 Jeremiah Cousins						
2300072-10 Water sample	Dup (Influent) Water	3/6/2023 9:45	3/6/2023 9:4	5 Jeremiah Cousins						Field Duplicate-1
2300072-11 Water sample	Effluent Water	3/6/2023 9:50	3/6/2023 9:5	0 Jeremiah Cousins						
2300072-12 Water sample	MW-31A Water	3/7/2023 12:05	3/7/2023 12:0	5 Jeremiah Cousins						
2300072-13 Water sample	MW-30A Water	3/7/2023 12:50	3/7/2023 12:5	0 Jeremiah Cousins						
2300072-14 Water sample	MW-20A Water	3/7/2023 15:30	3/7/2023 15:3	0:Jeremiah Cousins						
2300072-15 Water sample	MW-19A Water	3/7/2023 16:20	3/7/2023 16:2	0: Jeremiah Cousins						
	MW-48B Water	3/8/2023 7:45	3/8/2023 7:4	5 Jeremiah Cousins						
2300072-17 Water sample	MW-51B Water	3/8/2023 7:57		7 Jeremiah Cousins						
2300072-18 Water sample	MW-6A Water	3/8/2023 8:09		9 Jeremiah Cousins						
2300072-19 Water sample	MW-3B Water	3/8/2023 8:19		9 Jeremiah Cousins						
	MW-49B Water	3/8/2023 8:25		5 Jeremiah Cousins						
	MW-47B Water	3/8/2023 8:34		4 Jeremiah Cousins						
2300072-22 Water sample	MW-50B Water	3/8/2023 8:43		3 Jeremiah Cousins						
2300072-23 Water sample	MW-4B Water	3/8/2023 8:52		2 Jeremiah Cousins						
2300072-24 Water sample	Dup (MW-4B) Water	3/8/2023 8:52		2 Jeremiah Cousins						
2300072-25 Water sample	MW-5A Water	3/8/2023 9:13		3 Jeremiah Cousins						
•	MW-5B Water	3/8/2023 9:22		2 Jeremiah Cousins						Triple Volume MS/MSD
2300072-27 Water sample	•	• •		6 Jeremiah Cousins						Trip Blank
2300072-28 Water sample	Equipment Bla Water	3/8/2023 10:33	3/8/2023 10:3	3 Jeremiah Cousins						Equipment Blank
2300072-29 Water sample	Water									No Sample Collected
2300072-30 Water sample	Water									No Sample Collected
2300072-31 Water sample	Water									No Sample Collected

CHAIN OF CUSTODY RECORD ENVIRONMENTAL PROTECTION AGENCY REGION VII

EPA PROJECT MANAGER	(Print)			SAMPLING EVE						Ī	DATE OF SAM	PLE COLLECT	(Cel(8)	COC PAGE
Angela Puls			Garve	y Elevator							HINOHI	DAY YE		1 of 2
				CONTENTS	OF SHIPM	ENT				_				
WORK ORDER (WO) AND SAMPLE NUMBER	1 LPLANTIC BOTTLE	CAMOTER	BOTTLE	HOTTLE	DANTREVI AOV MEL	Tall Name	9710	LED	20	one		RECEIVING REMARKS OTH Condition of sa	ER DIFOR	MATTON receipt,
(e.g. 2200058-01) 2300072-01		HUMBER(E) OF CO	CHTAMENS PER	MEPLE MARRIER	3	1	8	200	1		Twice	other sample		-
						-		1			111	ole Volu	ne, w	r9/MPD
2300072-02					1	V	L						_	
2300072-03					1		-		H					
2300072-04	-				1	1		H					_	
2300072-05					1	!	H	H		_				
2300072-06					1	V								
2300072-07	-				1									
2300072-08					1	K				H				
2300072-09					1	V			Ш					
2300072-10					1	 ✓						Field D	uplica	te-l
2300072-11					1	V		_						
2300072-12					1	V								
2300072-13					1	V								
2300072-14					1	√								
2300072-15					1	√								
2300072-16					1	✓								
2300072-17					1	✓								
2300072-18					1	V								
2300072-19					1	✓								
2300072-20					1	1								
2300072-21					1	1								
2300072-22					1	1								
2300072-23					1	1								
2300072-24					1	1						Field D	uplica	te-2
	ESCRIPTIO	N OF SHIPM	ENT							MC	DDE OF SH	IPMENT		
32 CONTAINE	R(S) CONSIS	TING OF	CRATE	(S) ,		C	OM	MER	CIA	L CA	RRIER_		4	
		w/WO 2			1	S	AMF	Y.E.	RCE	NVI	EYED	and implicit	AIGOU I	A4440-03
			PE	RSONNEL C	USTODY R	FCO	RD					(SHIPPING	AIRBILL	NUMBER
RELINQUISHED BY (PM	WSAMPLER)	y Carly Crain-		RECEIVED B	Y							REASON FO	R CHAN	JE OF CUSTO
Cody Crat	er 🚟	PE, Circuly Crain, Branty Indially Parties of the Secured Parties have Parties to IAA		NICOLE	ROBLE	Z				y NIC 10:2	OLE ROBLEZ 1:00 -06'00'	STC	Ana	lyses
RELINQUISHED BY (PA				RECEIVED B	Y	-110	- The		O-			REASON FO	OR CHAM	SE OF CUSTO
SEALED	UNSEA			SEALED_		UNS	EAL	.ED	Ω					
RELINGUISHED BY (PA	WSAMPLER)			RECEIVED E	Y							REASON FO	R CHAM	BE OF CUSTO
SEALED	UNSEA	ED O		SEALED		UNS	EAL	.ED	a					
RELINQUISHED BY (PW	WSAMPLER)			RECEIVED B	Y							REASON FO		BE OF CUSTO
SEALED - SFA-4262 (REV 4/17)	UNSEA	ED O		SEALED		UNS	EAL	.ED	a				Pa	ge 37 of 3

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION V

epa project manager Angela Puls	(Print)		SITE OR	SAMPLING EVE Ey Elevator	π			EUR	URI V	D	DATE OF SAMPLE COLLECTION(S) COC PAGE 3 6-8 2023 2 of 2
				CONTENTS	OF SHIPMI	ENT					
WORK ORDER (WO) AND SAMPLE NUMBER (e.g. 2200058-01)	1 L.PLANTIC BOTTLE	CAMSTER	THE OF CONTAIN	BOTTLE SAMPLE MANDER	VOA SET D VIALS EA)	MATER.	0	MC WESTE	DE DA	omer	RECEIVING LABORATORY REMARKS OTHER REPORTATION (condition of assignment upon receipt, other nample numbers, etc.)
2300072-25		were safe) on a	AN IAMIDAN FOR	GALL CE MARKET	1	1		<u> - </u>			Other serriges reduced to over)
2300072-26					3	V					Triple Volume, MS/MSD
2300072-27					1	1			Н		Trip Blank
2300072-28					1	7			Н		Equipment Blank
2500072 20					-				Н		
WO Complete											
						F					
										F	
									П		
											Cooler hand-delivered to the STC with
					,						temp of 1-2degC. nr3/9/2023
	DESCRIPTIO	N OF SHIPM	IENT		-					MO	DDE OF SHIPMENT
		TING OF									EYED (SHIPPING AIRBILL NUMBER)
			PE	ERSONNEL C	- USTODY RI	ECO	RD				(anir-itto Artoice Homosety)
Cody Crat	er EEE	y Cady Coder P.C. CheCady Coder, Evendy andready print handles have published have		RECEIVED B NICOLE SEALED	ROBLE		igitali ata: 2	y nig r 2023.1		y NICO 10:22:	OLE ROBLEZ STC Analyses
RELINQUISHED BY (PA		0_		RECEIVED B	Y				O-		REARDN FOR CHANGE OF CUSTOR
RELINGUISHED BY (PA	UNSEAL WEAMPLER)			RECEIVED B		UNS	EAL	.ED	Ω		REASON FOR CHANGE OF CUSTOR
SEALED RELINQUISHED BY (PN	UNSEAL VSAMPLER)	LED O		SEALED RECEIVED B		UNS	EAL	ED	a	_	REASON FOR CHANGE OF CUSTOR
SEALED	UNSEAL	ED (SEALED		UNS	EAL	.ED	α		Page 38 of 30

SampleID Sam	npleName	SampleAlias	Matrix	SampledBegin	SampledEnd	SampledBy	BegDepth	EndDepth	DepthUnits	Latitude	Longitude	SampleComments
2300073-01 Air c	canister	SVE-3	Air	3/7/2023 8:28	3/7/2023 8:28	Jeremiah Cousins						
2300073-02 Air c	canister	SVE-4	Air	3/7/2023 8:31	3/7/2023 8:31	. Jeremiah Cousins						
2300073-03 Air c	canister	SVE-7R	Air	3/7/2023 8:36	3/7/2023 8:36	Jeremiah Cousins						
2300073-04 Air c	canister	SVE-8	Air	3/7/2023 8:38	3/7/2023 8:38	Jeremiah Cousins						
2300073-05 Air c	canister	SVE-9	Air	3/7/2023 8:41	3/7/2023 8:41	. Jeremiah Cousins						
2300073-06 Air c	canister	SVE-10	Air	3/7/2023 8:44	3/7/2023 8:44	Jeremiah Cousins						
2300073-07 Air c	canister	SVE-11	Air	3/7/2023 8:47	3/7/2023 8:47	Jeremiah Cousins						
2300073-08 Air c	canister	SVE-12	Air	3/7/2023 8:50	3/7/2023 8:50	Jeremiah Cousins						
2300073-09 Air c	canister	Effluent	Air	3/7/2023 9:00	3/7/2023 9:00	Jeremiah Cousins						
2300073-10 Air c	canister	Field Dup (Eff	lı Air	3/7/2023 9:00	3/7/2023 9:00	Jeremiah Cousins						Field Duplicate

SampleID	Canister ID	Regulator ID	Starting Pressure (In Hg)	Ending Pressure (In Hg)
2300073-01	697	•	27.5	1.5
2300073-02	857	•	27.5	2.5
2300073-03	810)	27.5	1.5
2300073-04	895	•	27.5	1.5
2300073-05	930)	27.5	0.5
2300073-06	918	}	27.5	0.5
2300073-07	601		27.5	3.5
2300073-08	602	•	27.5	4
2300073-09	896	j	27.5	4
2300073-10	707	•	26.5	2

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION V

epa project manager Angela Puls	(Print)		SITE OR	SAMPLING EVE By Elevator	NT					D	ATE OF SAM	PLE COLLECTION(8) 7 2023 DAY YEAR	COC PAGE 1 of 1
				CONTENTS	OF SHIPME	ENT							
WORK ORDER (WO) AND SAMPLE NUMBER (e.g. 2200058-01)	1 L PLANTIC BOTTLE	6L CAMETER	BOTTLE	BOTILE SAGRALE MARRIER	VOA SET D VIALS EAU	MATER.	0	PLEO HERE	BE DIA	OTHER		RECEIVING LABO REMARKS OTHER DI condition of samples other nample num	FORMATION upon receipt,
2300073-01		1				Ī		Ī	V				
2300073-02		1				İ		İ	1				
2300073-03		1				İ			V				
2300073-04		1							1				
2300073-05		1							V				
2300073-06		1							V				
2300073-07		1				İ			V				_
2300073-08		1				İ		T	П				
2300073-09		1				T		İ	7				
2300073-10		1							7			Field Dup	licate
WO Complete									П				
									Н				
									Н				
		2											
									Н				
									П				_
									П				_
											Air caniste	rs hand-delivered to	the STC at room tem
					,				П		No temp.	check needed on a	ir canisters. nr3/9/2
	ESCRIPTIO	N OF SHIPM	ENT							MO	DE OF SH	IPMENT	÷
	R(S) CONSIST	TING OF 2							RCIAL		RRIER		
	(-)							_				(SHIPPING AIRI	BILL NUMBER)
RELINQUISHED BY (PN	VSAMPLERI OF	y Cady Crain T., Chrocaly Crain, Somely and all maller of this demonst play handles have (1984)	Pl	RECEIVED E NICOLE	Y				ned by 03.09	NICO 10:23:	DLE ROBLEZ 25-06'00'	REABON FOR CH STC Ar	LANGE OF CUSTOD
SEALED RELINQUISHED BY (PM	UNSEAL			SEALED RECEIVED B		UNS						0.07.	MIGE OF CUSTOD
SEALED	UNSEAL			O SEALED		UNS	EAL	.ED	0				
RELINGUISHED BY (PN	VSAMPLER)			RECEIVED E								REASON FOR CH	IANGE OF CUSTOD
SEALED RELINQUISHED BY (PW	UNSEAL VSAMPLER)	.ED O		RECEIVED E		UNS	EAL	ED	0		_= =	REASON FOR CH	ANGE OF CUSTOD
SEALED	UNSEAL	.ED		SEALED		UNS	EAL	.ED	Ω-				Page 20 of 20

Attachment 2a: O&M Logs for LTRA Activities during January 2023



DATE: 1/4/23	TIME: 1030 - 1615
OPERATOR: SC/CIS	OPERATOR ON SITE: 5,75 Hours
WEATHER: Cold 30°	Om4m75
PPE: Hard Hat, Safty VCS+, Sta	21 toes Phase 2 - 5.00
3	
DAILY CHECKLIST:	
Vandalism/Damage to Site/Building Exterior: _	Mana
Vandalism/Damage to Process Area: <u>സമസ</u> ്ര	
Vandalism/Damage to Wells: _nowe_	
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0
	SVE 2: 8990.5
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0
	SVE 2: 8990.5
Hours of Downtime:	
MAINTENANCE ACTIVITIES/OBSERV	ATIONS/COMMENTS:
_{SVE-1} 98788,7	Hrs.; "H2O
SVE-2 9774.1	Hrs.; "H2O
Comments & SUC-14 SUC-2 CI	ovventily oft.

SVE 1 (SHALLOW) PROCESS MEASUREMENTS:

System Vacuu	System Vacuum: IN. H2O			Flow: NA				
Dilution Damper: 100% Open			Recycle Line:	Recycle Line: 0% Open				
Knockout Tank: 0 % Full			Temp: NA °F					
Location	Flow (CFM)	Vacuum (In. H₂O)	Location	Flow (CFM)	Vacuum (In. H₂O)			
Interior South North	Manifold, wells	listed South to	Outside Manifo	old, Well listed	East to West			
SVE-4		-	SVE-5		-			
SVE-8		_	SVE-6		-			
SVE-1		-	SVE-2		-			
SVE-7R		- /	SVE-12		-			
SVE-3		7-2	Reserved	-	-			

SVE 2 (DEEP) PROCESS MEASUREMENTS:

System Vacuu	ım:	IN. H2O	Flow:	NA			
Dilution Damper: 100% Open			Recycle Line: 0% Open				
Knockout Tank: 0 % Full			Temp: NA °F				
Location	Flow (CFM)	Vacuum (In. H₂O)	Location	Flow (CFM)	Vacuum (In. H₂O)		
Interior South North	Manifold, wells	listed South to	Outside Manifo	old, Well listed	East to West		
SVE-1/1		-	Reserved	-	-		
SVE-10 or SVE-13		-	Reserved	-			
SVE-9		-	Reserved	-	~		

COMBINED FLOW FOR SVE SYSTEM 1 & 2:	CFN

COMMENTS	

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)
RW-1	2.9	2,9	59, 2	2.4
RW-2	7.0	7,0	56,1	z.4
RW-3	3. S	3,8	40.4	3.7
RW-4	4.3	6.3	52,8	1, 8
RW-5	2.4	2.4	54,8	1.9
RW-6	83	83	54.8	11,9
RW-7	56	560	52,3	3,2
RW-8	163	103	59.4	11.3
Total Flow Rate	**	264.6	-	-
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)
Effluent Pump	4.0	137.6	59.9	6:0

Location	Reading		Location	Reading	
Influent Pressure	19.0	PSI	Effluent Pressure	21.0	PSI
Influent Pressure Δ	1829 O.O	PSI	Effluent Pressure Δ	20.8	PSI
Injection Well 1 - Water Column	le 0.5	FT	Injection Well 2 - Water Colum	-11.4	FT
Blower Pressure	2.5	"H2O			

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water South to No	Room South Manifold, wells listed orth	GET Water Roo South to North	om North Manifold, wells listed
RW-5	9938245	RW-7	131041856
RW-8	220082048	RW-6	203429984
RW-3	7412228	RW-1	6999522
RW-4	14009112	RW-2	12776160

ocation	Reading	Location	Reading
nfluent Filter Skid (wo	est side)		
North Filter Housing			
Top Gauge	PSI: 22	Side Gauge	PSI: 18
Pressure Δ (Side PSI-To	op PSI)		PSI: 4
South Filter Housing			
Top Gauge	PSI: 20	Side Gauge	PSI: 22
Pressure Δ (Side PSI-To	op PSI)		PSI: 2
Effluent Filter Skid (ea	est side)		
East Filter Housing			
Top Gauge	PSI: 30	Side Gauge	PSI: O
Pressure Δ (Side PSI-To	op PSI)		PSI: 30
West Filter Housing			_
Top Gauge	PSI: 29	Side Gauge	PSI: O
Pressure Δ (Side PSI-To	op PSI)		PSI: 29

DATE: 1/9/23	TIME: 1000 - 1300
OPERATOR:	OPERATOR ON SITE: 3.00 Hours
WEATHER: Sunny 41°	1000-1215 - fixing
WEATHER: Sunny 41° PPE: Hard Haz, Safty West, S	teel toes OPERATOR ON SITE: 5.00 Hours 1000-1215 - fixing Computer & R RW-6 Reeps trippi at VFD
	KW & Reeps thippi
DAILY CHECKLIST:	az VFD
	none
Vandalism/Damage to Process Area:	
Vandalism/Damage to Wells:	
validalisiii/Daliiage to Wells	
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0
	SVE 2: 8990.5
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0
	SVE 2: 8990.5
Hours of Downtime:	
MAINTENANCE ACTIVITIES/OBSER	VATIONS/COMMENTS.
	VATIONS/ COMMINICIATS.
SVE-1 93788,7	Hrs.; "H2O
SVE-2 9774,1	Hrs.; "H2O
Comments Sup -14 2 Correntiv	off

SYSTEM MEASUREMENTS (To be recorded weekly and with any sampling event)

SVE 1 (SHALLOW) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacuu	m:	IN. H2O	Flow:	NA	
Dilution Damp	Dilution Damper: 100% Open		Recycle Line:	0%	Open
Knockout Tar	ık: 0 %	Full	Temp:	NA	o _F
Location	Flow (CFM)	Vacuum (In. H₂O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior South North	Interior South Manifold, wells listed South to North		Outside Manifo	old, Well listed	East to West
SVE-4		-	SVE-5		-
SVE-8		-	SVE-6		-
SVE-1		-	SVE-2		-
SVE-7R		_	SVE-12		•
SVE-3		-	Reserved	-	-

SVE 2 (DEEP) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacuum: IN. H2O		Flow: NA			
Dilution Damper: 100% Open		Recycle Line: 0% Open		Open	
Knockout Tan	ık: 0 %	Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H₂O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior South North	Manifold, wells	listed South to	Outside Mani	fold, Well listed	East to West
SVE-11		-	Reserved	-	-
SVE-10 or SVE-13		-	Reserved	_	_
SVE-9		-	Reserved	-	-

COMBINED FLOW FOR SVE SYSTEM 1 & 2:	Currently off EPA Request	CFM
COMMENTS		
SVE-1 & SVE-2 Currently off due to EPA Request.		

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)
RW-1	2.9	2,9	59.3	2.60
RW-2	7.0	7.0	56,3	2,4
RW-3	3.8	3, 8	46.6	2.3
RW-4	6,3	6.3	52,8	1.7
RW-5	2,8	2.8	59,0	1.0
RW-6	80	80	54.7	11,8
RW-7	58	58	52.5	3,2
RW-8	103	102	60.0	11.6
Total Flow Rate	-	262.8	-	-
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)
Effluent Pump	6.0	138.6	24.5	6.0

Location	Reading		Location	Reading	
Influent Pressure	9.7	PSI	Effluent Pressure	0,6	PSI
Influent Pressure Δ	0.1	PSI	Effluent Pressure Δ	1.7	PSI
Injection Well 1 - Water Column	61.2	FT	Injection Well 2 - Water Colum	-11.6	FT
Blower Pressure	2.5	"H2O	*Injec	tion Well 2 (No Tra	ansducer)

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water Room South Manifold, wells listed South to North		GET Water Room North Manifold, we South to North	
RW-5	9956375	RW-7	131439552
RW-8	220793456	RW-6	203668496
RW-3	7739171	RW-1	M020115
RW-4	14053734	RW-2	12 025950

otal flow through s	tripper system:	262.8	gpm
tripper tower magn	nehilic reading:		1,8 "H2O
SAG FILER PROC	CESS MEASUREMENTS	S:	
Location	Reading	Location	Reading
Influent Filter Skid	(west side)		·
North Filter Housin	g		
Top Gauge	PSI: 22	Side Gauge	PSI:
Pressure Δ (Side PS	I-Top PSI)		PSI: 6
South Filter Housin	g		
Top Gauge	PSI: 20	Side Gauge	PSI: 22
Pressure Δ (Side PS	I-Top PSI)		PSI: 2
Effluent Filter Skid	(east side)		
East Filter Housing			
Top Gauge	PSI: 6	Side Gauge	PSI: 0
Pressure Δ (Side PS	I-Top PSI)		PSI: O
West Filter Housinยู	S		
Top Gauge	PSI:	Side Gauge	PSI: O
Pressure Δ (Side PS	il-Top PSI)		PSI: o
	6.89 with ySI		
)H-4.00	Keading - 4.04		

DATE: 1/14/23	TIME: 930 - 1445
OPERATOR: 🔀	OPERATOR ON SITE: <u>5,25</u> Hours , 75 - om4 m
WEATHER: Sonny 37° PPE: Hard Hat, Safry UPSt, Steel	toes 4.5 - working on Rw-6, Cleaning. Hut and re organizing.
DAILY CHECKLIST:	
Vandalism/Damage to Site/Building Exterior:	hone
Vandalism/Damage to Process Area:now_	
Vandalism/Damage to Wells:none	
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0
	SVE 2: 8990.5
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0
	SVE 2: 8990.5
Hours of Downtime:	
MAINTENANCE ACTIVITIES/OBSER\	/ATIONS/COMMENTS:
sve-1 98788,7	Hrs.; "H2O
SVE-2 9774.1	Hrs.; "H2O
Comments SVF-142 Currently of	¢.

System Vacuum: IN. H2O			Flow:	NA	
Dilution Damp	per: 100	% Open	Recycle Line: 0% Open		
Knockout Tar	0 %	Full	Temp: NA ^o F		
Location	Flow (CFM)	Vacuum (In. H₂O)	Location	Flow (CFM)/	Vacuum (In. H₂O)
Interior South North	Manifold, wells	listed South to	Outside Manifo	old, Well listed	East to West
SVE-4			SVE-5		-
SVE-8		-	SVE-6		-
SVE-1		-	SVE-2		-
SVE-7R		- \	SVE-1/2		_
SVE-3		-	Keserved	-	
System Vacuu Dilution Damp		1N. H2O % Open	Flow:	NA 0%	
•	per: 100		Flow: Recycle Line: Temp:		Open
Dilution Damp	per: 100	% Open	Recycle Line:	0%	Open
Dilution Damp Knockout Tan Location	per: 100 k: 0%	% Open Full Vacuum (In. H ₂ O)	Recycle Line:	0% NA Flow (CFM)	Open ^o F Vacuum (In. H ₂ O)
Dilution Damp Knockout Tan Location Interior South	per: 100 k: 0 <i>%</i> Flow (CPM)	% Open Full Vacuum (In. H ₂ O)	Recycle Line: Temp: Location	0% NA Flow (CFM)	Open ^o F Vacuum (In. H ₂ O)
Dilution Damp Knockout Tan Location Interior South North	per: 100 k: 0 <i>%</i> Flow (CPM)	% Open Full Vacuum (In. H ₂ O)	Recycle Line: Temp: Location Outside Manife	0% NA Flow (CFM)	Open ^o F Vacuum (In. H ₂ O)
Dilution Damp Knockout Tan Location Interior South North SVE-11	per: 100 k: 0 <i>%</i> Flow (CPM)	% Open Full Vacuum (In. H ₂ O)	Recycle Line: Temp: Location Outside Manifo	0% NA Flow (CFM)	Open ^o F Vacuum (In. H ₂ O)
Dilution Damp Knockout Tan Location Interior South North SVE-11 SVE-10 or SVE-13	per: 100 k: 0 <i>%</i> Flow (CPM)	% Open Full Vacuum (In. H ₂ O)	Recycle Line: Temp: Location Outside Manifo Reserved Reserved	0% NA Flow (CFM)	Open ^o F Vacuum (In. H ₂ O
Dilution Damp Knockout Tan Location Interior South North SVE-11 SVE-10 or SVE-13	k: 0.% Flow (CPM) Map fold, wells	% Open Full Vacuum (In. H ₂ O)	Recycle Line: Temp: Location Outside Manifo Reserved Reserved Reserved	0% NA Flow (CFM) old, Well listed	Open ^o F Vacuum (In. H ₂ O
Dilution Damp Knockout Tan Location Interior South North SVE-11 SVE-10 or SVE-13	k: 0.% Flow (CPM) Map fold, wells	% Open Full Vacuum (In. H ₂ O) listed South to	Recycle Line: Temp: Location Outside Manifo Reserved Reserved Reserved	0% NA Flow (CFM) old, Well listed	Open F Vacuum (In. H ₂ O) East to West - -

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)
RW-1	2.9	2.9	59.3	3,1
RW-2	7.0	7,0	5Co. 2	2.3
RW-3	4.0	4,0	46.9	1,9
RW-4	4.7	6.7	53.5	0,4
RW-5	3.0	3,0	59,4	1,1
RW-6	68	0	0.0	19,4
RW-7	40	60	52,8	2.5
RW-8	100	100	59.9	11,6
Total Flow Rate	-	183.0	-	-
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)
Effluent Pump	6.0	93.6	15.5	6.0

convently toffolion to UED/Pump Issues

Location	Reading		Location	Reading	
Influent Pressure	19.2	PSI	Effluent Pressure	-1.(PSI
Influent Pressure Δ	0.4	PSI	Effluent Pressure Δ	1.5	PSI
Injection Well 1 - Water Column	40-2	FT	Injection Well 2 - Water Colum	-11.4	FT
Blower Pressure	2.5	"H2O	*Injectio	n Well 2 (No Tra	nsducer)

Location Total Flow (gallons)		Location	Total Flow (gallons)
GET Water Room South Manifold, wells listed South to North		GET Water Room North Manifold, wells listed South to North	
RW-5	99 86002	RW-7	132037648
RW-8	221802454	RW-6	203707872
RW-3	7775814	RW-1	7049310
RW-4	14118611	RW-2	12896537

Total flow through stripper system:		183,6	
Stripper tower magnehilic r	eading:	1.4	"H2O
BAG FILER PROCESS N	MEASUREMENTS:		
Location	Reading	Location	Reading
Influent Filter Skid (west	side)		
North Filter Housing			
Top Gauge	PSI: 22	Side Gauge	PSI: 17
Pressure Δ (Side PSI-Top P	SI)		PSI: 5
South Filter Housing			
Top Gauge	PSI: 20	Side Gauge	PSI: 21
Pressure Δ (Side PSI-Top P	SI)		PSI: (
Effluent Filter Skid (east s	ide)		
East Filter Housing			
Top Gauge	PSI: O	Side Gauge	PSI: 6
Pressure Δ (Side PSI-Top P	SI)		PSI: O
West Filter Housing			
Top Gauge	PSI: O	Side Gauge	PSI: O
Pressure Δ (Side PSI-Top P	SI)		PSI: O
COMMENTS			
PH Effluent: 7.9			
		Switched VFD of Ru	
Could Conterned -	that it was not l	IFD & Krieger thinnes	notor is not

DATE: 1-25-23	TIME: 12: 11:45 - 0mm Sted-
OPERATOR: <u>Deryk Didinison</u>	
WEATHER: 15- VIA	- EPA- NOSE med 10:30
PPE: standard	-gave tour-
DAILY CHECKLIST:	-6+M- -(10:30-2:00 - total site time -
Vandalism/Damage to Site/Building Exterior:	non
Vandalism/Damage to Process Area:	ON
Vandalism/Damage to Wells:	€
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0
	SVE 2: 8990.5
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0
	SVE 2: 8990.5
Hours of Downtime:	
MAINTENANCE ACTIVITIES/OBSERVA	TIONS/COMMENTS:
A P.C	Hrs.; "H2O
SVE-2 OFF	Hrs.; "H2O
Comments Met on site:	Angela Puls - EPA Ocessubi, Payton Beakmann NOEE
Sim Borovich, May All	acissub, Payton Berkmann NOEE
- installed (1) new air	intake filter
	y dis-connecting "power" and
re-connecting (small be	lack box / controller)
- Re-stortal RW-3 by	clearing alarm and re-starting

SYSTEM MEASUREMENTS (To be recorded weekly and with any sampling event)

SVE 1 (SHALLOW) PROCESS MEASUREMENTS: Currently Off PA Request

System Vac	uum:	IN. H2O	Flow:	NA	
Dilution Damper: 100% Open		Recycle Line	: 0%	Open	
Knockout T	ank: 0 9	% Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H ₂ O)
Interior Sou North	th Manifold, well	s listed South to	Outside Man	nifold, Well listed	East to West
SVE-4		-	SVE-5		-
SVE-8		-	SVE-6		-
SVE-1		-	SVE-2		-
SVE-7R		-	SVE-12		-
SVE-3		-	Reserved	/ -	-

SVE 2 (DEEP) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacuum: IN. H2O		Flow:	NA		
Dilution Damper: 100% Open			Recycle Line	: 0%	Open
Knockout Ta	ank: 0 %	6 Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H₂O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior Sou North	th Manifold, wells	s listed South to	Outside Mar	nifold, Well listed	East to West
SVE-11		1+1	Reserved	-	-
SVE-10 or SVE-13		-	Reserved	-	-
SVE-9		_	Reserved	-	-

COMBINED FLOW FOR SVE SYSTEM 1 & 2:	Currently off EPA Request	CFM	
COMMENTS			
SVE-1 & SVE-2 Currently off due to EPA Request.			

Rw-3
off C
01
-Len I
arrival-
I turned
01.

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)
RW-1	2.9	2.9	59.4	2.4
RW-2	7.0	7.0	56.2	2.2
RW-3	4.1	4.1	47.0	3-1
RW-4	6.6	6.6	53. Y	0.9
RW-5	2-8	2-8	59.6	1.3
RW-6	OFF			
RW-7	60	60	52-7	2-8
RW-8	100	100	59.8	11-4
Total Flow Rate	183.4	183-4	92	-
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)
Effluent Pump	6.0	96.5	15.3	6.0

Location	Reading		Location	Reading	
Influent Pressure	19.2	PSI	Effluent Pressure	0.3	PSI
Influent Pressure Δ	-0.4	PSI	Effluent Pressure Δ	1.8	PSI
Injection Well 1 - Water Column	60.9	FT	Injection Well 2 - Water Colum	-11.6	FT
Blower Pressure	19.6	"H2O	*Injec	tion Well 2 (No Tran	sducer)

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water South to No	Room South Manifold, wells listed orth	GET Water F South to No	Room North Manifold, wells listed rth
RW-5	2.8 /10023029	RW-7	60.7 / 132820160
RW-8	100:1 / 223109088	RW-6	OFF Ø
RW-3	4.1 / 7812833	RW-1	2.9 / 7087/99
RW-4	6.5/14203048	RW-2	7.0/ 12988138

BAG FILER PROCI	ESS MEASUREMENT	······································	
Location	Reading	Location	Reading
Influent Filter Skid (west side)		
North Filter Housing			
Top Gauge	PSI: 25	Side Gauge	PSI: 16.5
Pressure Δ (Side PSI-	Top PSI)		PSI: 8.5
South Filter Housing			
Top Gauge	PSI: 10	Side Gauge	PSI: 22
Pressure Δ (Side PSI-Top PSI)			PSI: Z
Effluent Filter Skid (east side)		-
East Filter Housing			
Гор Gauge	PSI:	Side Gauge	PSI:
Pressure Δ (Side PSI-	Top PSI)		PSI: —
West Filter Housing			
Top Gauge	PSI:	Side Gauge	PSI:
. /	Top PSI)		PSI:

Attachment 2c: O&M Logs for LTRA Activities during February 2023



DATE: 2-1+23	TIME: 1045 - 1245
OPERATOR: TC	OPERATOR ON SITE: 2.50 Hours
WEATHER: Sunny 15°	I hr - fixing RW-4
WEATHER: Sunny 15° PPE: Hard Hot, Safty vest, Ste	2el toes
DAILY CHECKLIST:	
Vandalism/Damage to Site/Building Exterior:	none
Vandalism/Damage to Process Area: _no~	
Vandalism/Damage to Wells:	
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0
	SVE 2: 8990.5
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0
	SVE 2: 8990.5
Hours of Downtime:	
MAINTENANCE ACTIVITIES/OBSER	VATIONS/COMMENTS:
SVE-1 98813.4	Hrs.; "H2O
SVE-2 09 798.8	Hrs.; "H2O
*	
Comments	
Comments	

SYSTEM MEASUREMENTS (To be recorded weekly and with any sampling event)

SVE 1 (SHALLOW) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacuum: IN. H2O		Flow:	NA		
Dilution Damper: 100% Open		Recycle Line:	0%	Open	
Knockout Tank: 0 % Full		Temp:	NA	°F	
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior South Manifold, wells listed South to North		Outside Manifold, Well listed East to West			
SVE-4		£ 2	SVE-5		-
SVE-8		-	SVE-6		-
SVE-1		-	SVE-2		-
SVE-7R		-	SVE-12		1-
SVE-3		-	Reserved	-	-

SVE 2 (DEEP) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacu	ıum:	IN. H2O	Flow:	NA	
Dilution Dan	nper: 100	% Open	Recycle Line:	0%	Open
Knockout Ta	nk: 0 %	5 Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H₂O)	Location	Flow (CFM)	Vacuum (In. H ₂ O)
Interior Sout North	th Manifold, wells	listed South to	Outside Man	ifold, Well listed	East to West
SVE-11		7-	Reserved	-	-
SVE-10 or SVE-13		-	Reserved	-	
SVE-9		-	Reserved	-	-

COMBINED FLOW FOR SVE SYSTEM 1 & 2:	Currently off EPA Request	CFM
COMMENTS		
SVE-1 & SVE-2 Currently off due to EPA Request.		

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)	
RW-1	2.9	2.9	59.3	2.3	
RW-2	7.0	7.0	54.2	2,2	
RW-3	4.1	4.1	47.1	1.9	
RW-4	6.5	6.5	52,8	4.9	
RW-5	2.8	2, 8	59.9	1.4	not
RW-6	10.8	0	0.0	19,5	> marking
RW-7	42	62	52,9	2.6	
RW-8	100	100	59.9	12,1	
Total Flow Rate	-	185.3	-	-	
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)	
Effluent Pump	6.0	97.4	14.0	6,0	

Location	Reading		Location	Reading	
Influent Pressure	19.3	PSI	Effluent Pressure	0.3	PSI
Influent Pressure Δ	0.3	PSI	Effluent Pressure Δ	7. 7	PSI
Injection Well 1 - Water Column	61.0	FT	Injection Well 2 - Water Colum	-11.0	FT
Blower Pressure	3,3	"H2O	*Injec	ction Well 2 (No Trans	sducer)

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water South to N	Room South Manifold, wells listed orth	GET Water South to No	Room North Manifold, wells listed orth
RW-5	10051024	RW-7	133432832
RW-8	224111 824	RW-6	20340 7872
RW-3	7853985	RW-1	7116333
RW-4	14235012	RW-2	1305 8568

otal flow through stripper system:			gpm
tripper tower magne	hilic reading:	1,8	"H2O
AG FILER PROCE	ESS MEASUREMENTS	S:	
Location	Reading	Location	Reading
Influent Filter Skid (west side)		•
North Filter Housing			
Top Gauge PSI: 24		Side Gauge	PSI: / 7
Pressure Δ (Side PSI-Top PSI)			PSI: 9
South Filter Housing			
Top Gauge	PSI: 20	Side Gauge	PSI: 22
Pressure Δ (Side PSI-Top PSI)			PSI: 2
Effluent Filter Skid (east side)		·
East Filter Housing			
Top Gauge	PSI: 6	Side Gauge	PSI: O
Pressure Δ (Side PSI-	-Top PSI)		PSI: 👩
West Filter Housing			
Top Gauge	PSI: O	Side Gauge	PSI: Ø
Pressure Δ (Side PSI-Top PSI)			PSI: O

DATE: 2/20/22	TIME: 900 - 1115
OPERATOR: JC	OPERATOR ON SITE: Z. 25 Hours
WEATHER: Sunny 37°	1.5-Collecting water leve
PPE: Hard Hat, Safty West, S	Heel toes working on Rw-3, drop off
DAILY CHECKLIST:	
Vandalism/Damage to Site/Building Exterior:	none
Vandalism/Damage to Process Area:	_
Vandalism/Damage to Wells:	
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0
	SVE 2: 8990.5
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0
	SVE 2: 8990.5
Hours of Downtime:	
MAINTENANCE ACTIVITIES/OBSER	VATIONS/COMMENTS:
SVE-1 98813,4	Hrs.; "H2O
SVE-2 09798.8	Hrs.; "H2O
Comments Mw-4	4A- Water-121.80
Y22.03	total - 122.05

SYSTEM MEASUREMENTS (To be recorded weekly and with any sampling event)

SVE 1 (SHALLOW) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacuum: IN. H2O		Flow:	NA		
Dilution Damper: 100% Open		Recycle Line:	0%	Open	
Knockout Tank: 0 % Full		Temp:	NA	°F	
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior South Manifold, wells listed South to North			Outside Man	ifold, Well listed	East to West
SVE-4		/-	SVE-5		-
SVE-8		-	SVE-6		-
SVE-1		-	SVE-2		-
SVE-7R		-	SVE-12		-
SVE-3			Reserved	-	-

SVE 2 (DEEP) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vac	uum:	IN. H2O	Flow:	NA	
Dilution Dar	mper: 100	% Open	Recycle Line:	0%	Open
Knockout Ta	ank: 0 %	5 Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H₂O)	Location	Flow (CFM)	Vacuum (In. H ₂ O)
Interior Sou North	th Manifold, wells	listed South to	Outside Mani	fold, Well listed	East to West
SVE-11		_	Reserved	-	-
SVE-10 or SVE-13		-	Reserved		7-
SVE-9		-	Reserved	-	-

COMMENTS	
SVE-1 & SVE-2 Currently off due to EPA Request.	

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)
RW-1	2.9	2.9	59.5	2.8
RW-2	7.0	7.0	5co. 4	2.4
RW-3	4.1	4.1	47.1	1.6
RW-4	6.5	6.5	53.2	1.3
RW-5	2.9	Z.5	60.0	1.7
RW-6	68	O	0.0	19.7
RW-7	62	63	52,9	2,8
RW-8	99	99	59.8	12.5
Total Flow Rate	-	185	-	-
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)
Effluent Pump	6.0	91.2	15.5	6.0

Location	Reading		Location	Reading	
Influent Pressure	19.4	PSI	Effluent Pressure	0.2	PSI
Influent Pressure Δ	-0.2	PSI	Effluent Pressure Δ	1.5	PSI
Injection Well 1 - Water Column	60.8	FT	Injection Well 2 - Water Colum	-11.6	FT
Blower Pressure	2.5	"H2O	*Injec	tion Well 2 (No Tran	nsducer)

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water Room South Manifold, wells listed		GET Water	Room North Manifold, wells listed
South to No	rth	South to No	orth
RW-5	10128099	RW-7	135126112
RW-8	226836080	RW-6	203707872
RW-3	7965869	RW-1	7195530
RW-4	14409075	RW-2	13250053

tripper tower magne	hilic reading:	1.6	"H2O
AG FILER PROCE	SS MEASUREMENTS	:	
Location	Reading	Location	Reading
Influent Filter Skid (1	west side)		
North Filter Housing			
Top Gauge	PSI: 22	Side Gauge	PSI: 16
Pressure Δ (Side PSI-Top PSI)			PSI: 6
South Filter Housing			
Top Gauge	PSI: 20	Side Gauge	PSI: 22
Pressure Δ (Side PSI-	Top PSI)		PSI: 2
Effluent Filter Skid (east side)	,	
East Filter Housing			
Top Gauge	PSI: Ø	Side Gauge	PSI: Ø
Pressure Δ (Side PSI-	Top PSI)		PSI: O
West Filter Housing			
Top Gauge	PSI: O	Side Gauge	PSI: O
Pressure Δ (Side PSI-Top PSI)			PSI: 🔊

DATE: 2/27/23	_ TIME:	815 - 1645
OPERATOR: 5C		ON SITE: 8.5 Hours
WEATHER: Sunny 42°	1 hr - 0	om4m
PPE: Hard Hat, Safty Vest, Ste	ell toes Misher	Pulling RW-64 fixing Computer
		OMPOTER
DAILY CHECKLIST:		
andalism/Damage to Site/Building Exterior: _	Non	
Vandalism/Damage to Process Area:		
Vandalism/Damage to Wells:		
	2.45	
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0	20'3'/2" 20'2" 20'2" 18'2"
	SVE 2: 8990.5	20'2"
		20 2
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0	18'2"
	SVE 2: 8990.5	P4 1 "
		20' 2"
Hours of Downtime:		
MAINTENANCE ACTIVITIES/OBSER\	/ATIONS/COMMENTS	<u>S:</u>
WAINTENANCE ACTIVITIES OBSERV		
SVE-1 98813,4	Hrs.; "H2O	
SVE-1 98813,4		
	Hrs.; "H2O Hrs.; "H2O	
SVE-1 98813.4 SVE-2 99798.8	Hrs.; "H2O	
SVE-1 98813,4	Hrs.; "H2O	
SVE-1 98813,4 SVE-2 99798.8 Comments Replactions protos: 21D14- Pump: 100121	Hrs.; "H2O	010
SVE-1 98813,4 SVE-2 39798.8 Comments Replacient potor: 21014-	Hrs.; "H2O	Pump - H13BG0005-P2 motor - 191214-23-001

SYSTEM MEASUREMENTS (To be recorded weekly and with any sampling event)

SVE 1 (SHALLOW) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacu	ium:	IN. H2O	Flow:	NA	
Dilution Damper: 100% Open			Recycle Line:	0%	Open
Knockout Ta	ank: 0 9	% Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior Sout North	h Manifold, well	s listed South to	Outside Man	ifold, Well listed	East to West
SVE-4		-	SVE-5		-
SVE-8		-	SVE-6		-
SVE-1		-	SVE-2		-
SVE-7R			SVE-12		-
SVE-3		-	Reserved	-	-

SVE 2 (DEEP) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacuum: IN. H2O			Flow:	NA	
Dilution Damper: 100% Open Knockout Tank: 0 % Full			Recycle Line:	0%	Open
			Temp: NA ⁰F		
Location	Flow (CFM)	Vacuum (In, H2O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior Sout North	h Manifold, wells	listed South to	Outside Man	ifold, Well listed	East to West
SVE-11			Reserved	-	
SVE-10 or SVE-13			Reserved	-	-
SVE-9		-	Reserved	-	-

COMBINED FLOW FOR SVE SYSTEM 1 & 2:	Currently off EPA Request	CFM
COMMENTS		
SVE-1 & SVE-2 Currently off due to EPA Request.		
SVE-1 & SVE-2 Currently off due to EPA Request.		

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)
RW-1	2.9	2,9	59,4	2,9
RW-2	7.0	7.0	50,5	2,4
RW-3	4,1	4.1	45.9	1.1
RW-4	Car4	6,4	53,3	1.1
RW-5	2.7	2.7	57,4	1,4
RW-6	90	90	54,4	10,6
RW-7	62	42	53,2	2.3
RW-8	100	100	59,9	12.1
Total Flow Rate	-	2751	-	-
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)
Effluent Pump	6,5	110,9	28.7	6.0

Location	Reading		Location	Reading	
Influent Pressure	19.8	PSI	Effluent Pressure	0.5	PSI
Influent Pressure Δ	40.1	PSI	Effluent Pressure Δ	1,2	PSI
Injection Well 1 - Water Column	Le2.3	FT	Injection Well 2 - Water Colum	-11.6	FT
Blower Pressure	2.5	"H2O	*Injec	ction Well 2 (No Trans	ducer)

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water Room South Manifold, wells listed South to North		GET Water Room North Manifold, wells listed South to North	
RW-5	10156016	RW-7	135779264
RW-8	227876416	RW-6	203709824
RW-3	9009515	RW-1	7225719
RW-4	14475537	RW-2	13323045

tripper tower magn	ehilic reading:		1.8	"H2C
BAG FILER PROC	ESS MEASURE	EMENTS:		
Location	Reading		Location	Reading
Influent Filter Skid	(west side)			
North Filter Housing	5			
Top Gauge	PSI:	4	Side Gauge	PSI: ZZ
Pressure Δ (Side PSI-Top PSI)			PSI: C	
South Filter Housing	g			
Top Gauge	PSI:	46	Side Gauge	PSI: 72
Pressure Δ (Side PSI-Top PSI)			PSI: 12	
Effluent Filter Skid	(east side)			
East Filter Housing				
Top Gauge	PSI:)	Side Gauge	PSI: 🗢
Pressure Δ (Side PS	I-Top PSI)			PSI:
West Filter Housing	5			
Top Gauge	PSI:	0	Side Gauge	PSI: O
Pressure Δ (Side PS	I-Top PSI)			PSI:
	I-Top PSI)			PSI:
COMMENTS				
D11 E(0)	7 1			

Attachment 2c: O&M Logs for LTRA Activities during March 2023



DATE: 3/7/23		TIME: 900 - 930		
OPERATOR: 5C	300	OPEI	RATOR ON SITE:	Hours
WEATHER: Cloud	dy 30°			
PPE: Hard Ha	et, Safty vest, S	Steel toes		
	, , ,			
DAILY CHECKLIST	<u>.</u>			
Vandalism/Damage to	Site/Building Exterior: _	nort		
Vandalism/Damage to	Process Area: None			
Vandalism/Damage to	Wells:			
Hours of Operation Since Last Oil Change		SVE 1: 98005.0		
		SVE 2: 8990.5		
Hour of Operation Since Last Blower Lube:		SVE 1: 98005.0		
		SVE 2: 8990.5		
Hours of Downtime: _				
MAINTENANCE A	CTIVITIES/OBSERV	ATIONS/COMIV	IENTS:	
SVE-1	988395	Hrs.; "H2O	,	
SVE-2	9.8239	Hrs.; "H2O		
Comments				

SYSTEM MEASUREMENTS (To be recorded weekly and with any sampling event)

SVE 1 (SHALLOW) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vac	uum: 29	IN. H2O	Flow:	NA	
Dilution Dar	mper: 100	0% Open	Recycle Line:	0%	Open
Knockout T	ank: 0 9	% Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior Sou North	ith Manifold, well	s listed South to	Outside Man	ifold, Well listed	East to West
SVE-4	17.3	-	SVE-5	-	-
SVE-8	13.7	-	SVE-6	-	-
SVE-1	-	-/	SVE-2	_	
SVE-7R	14.3	-	SVE-12	22.6	-
SVE-3	26.1	-	Reserved	-	1-2

SVE 2 (DEEP) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacu	uum: 75	IN. H2O	Flow:	NA	
Dilution Dan	nper: 100)% Open	Recycle Line:	0%	Open
Knockout Ta	nk: 0 %	6 Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior Sou North	th Manifold, well	s listed South to	Outside Man	ifold, Well listed	East to West
SVE-11	180.2	-	Reserved	-	-
SVE-10 or SVE-13	143.9	-	Reserved	-	-
SVE-9	176.3	- 1 - 1	Reserved	-	-

COMBINED FLOW FOR SVE SYSTEM 1 & 2: Currently off EPA Request CFM

(O	M	IV	ΙE	N	TS

SVE-1 & SVE-2 Currently off due to EPA Request.	

GROUNDWATER EXTRACTION AND TREATMENT (GET) SYSTEM MEASUREMENTS AT THE PLC SCREEN:

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)
RW-1	2.9	2,9	59.3	2. A
RW-2	٦,٥	7.0	54.4	2.4
RW-3	4.3	4.3	46.1	1, 2
RW-4	6.7	le. 7	54,0	0.9
RW-5	2.9	2.9	59.5	1.0
RW-6	90	90	5W.1	10.4
RW-7	59	59	52.7	2.7
RW-8	100	100	59,9	12.1
Total Flow Rate	-	272.8	-	-
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)
Effluent Pump	6.0	144.0	25.7	4.0

Location	Reading		Location	Reading	
Influent Pressure	19.4	PSI	Effluent Pressure	0.3	PSI
Influent Pressure Δ	02	PSI	Effluent Pressure Δ	1.4	PSI
Injection Well 1 - Water Column	42.2	FT	Injection Well 2 - Water Colum	-11.4	FT
Blower Pressure	2.5	"H2O	*Injec	tion Well 2 (No Tran	sducer)

GET SYSTEM MEASUREMENTS IN THE GET WATER ROOM:

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water Room South Manifold, wells listed South to North		GET Water Room North Manifold, wells listed South to North	
RW-5	10185424	RW-7	136 427600
RW-8	229984112	RW-6	10125424 204707040
RW-3	8053944	RW-1	7257864
RW-4	14545113	RW-2	13400767

GET SYSTEM MEASUREMENTS IN THE GET WATER ROOM (Continued):

	nilic reading: 2.		
AG FILER PROCE	SS MEASUREMENTS Reading	Location	Reading
Influent Filter Skid (v		Location	
	vest side)		-
North Filter Housing Top Gauge	PSI: 2.5	Side Gauge	PSI: 16
Pressure Δ (Side PSI-		Side dauge	PSI:
South Filter Housing	1001317		1 511
Top Gauge	PSI: 20	Side Gauge	PSI: 22
Pressure Δ (Side PSI-Top PSI)			PSI:
Effluent Filter Skid (e	east side)		
East Filter Housing			
Top Gauge	PSI: Q	Side Gauge	PSI: O
Pressure Δ (Side PSI-	- 12		PSI:
West Filter Housing			
Top Gauge	PSI: O	Side Gauge	PSI: Q
D + /0: 1 DOI:	Top PSI)		PSI:

OPERATIONS AND MAINTENANCE REPORT FORM GARVEY ELEVATOR SITE, LTRA Task Order

DATE: 3/14/23	TIME: 1130 - 1300
OPERATOR:	OPERATOR ON SITE: Hours
WEATHER: Sunny 34°	-5 - Working on compute
WEATHER: Sunny 34° PPE: Itand Hat, Safty vest, Stee	Ltoes
DAILY CHECKLIST:	
Vandalism/Damage to Site/Building Exterior:	none
Vandalism/Damage to Process Area:	
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0
	SVE 2: 8990.5
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0
	SVE 2: 8990.5
Hours of Downtime:	
MAINTENANCE ACTIVITIES/OBSER	VATIONS/COMMENTS:
SVE-1 98838.5	Hrs.; "H2O
SVE-2 9823,9	Hrs.; "H2O
Comments	

SYSTEM MEASUREMENTS (To be recorded weekly and with any sampling event)

SVE 1 (SHALLOW) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacuum: IN. H2O			Flow:	NA	
Dilution Dar	nper: 100	0% Open	Recycle Line:	0%	Open
Knockout T	ank: 0.5	% Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H ₂ O)
Interior Sou North	th Manifold, well	s listed South to	Outside Man	ifold, Well listed	East to West
SVE-4		-	SVE-5		
SVE-8		-	SVE-6		-
SVE-1		-	SVE-2		-
SVE-7R			SVE-12		-
SVE-3		-	Reserved	-	-

SVE 2 (DEEP) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacu	ium:	IN. H2O	Flow:	NA	
Dilution Dan	nper: 100	0% Open	Recycle Line:	0%	Open
Knockout Ta	nk: 0 9	% Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior Sout North	th Manifold, well	s listed South to	Outside Mar	nifold, Well listed	East to West
SVE-11		-	Reserved	-	-
SVE-10 or SVE-13		· · ·	Reserved		-
SVE-9		_	Reserved	-	1

	CFM	
COMMENTS		
SVE-1 & SVE-2 Currently off due to EPA Request.		

GROUNDWATER EXTRACTION AND TREATMENT (GET) SYSTEM MEASUREMENTS AT THE PLC SCREEN:

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)
RW-1	2.9	2,9	59.4	2.4
RW-2	7.0	7.0	56.4	z.3
RW-3	4.2	4.2	45.8	1,0
RW-4	6,6	6,6	53,8	1,0
RW-5	3.0	3.0	57.7	1,3
RW-6	90	90	54.1	10.7
RW-7	59	59	52.0	2.3
RW-8	100	100	59,9	12,2
Total Flow Rate	-	272.7	-	-
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)
Effluent Pump	6.0	136.4	25.7	6.0

Location	Reading		Location	Reading	
Influent Pressure	19.3	PSI	Effluent Pressure	~1.1	PSI
Influent Pressure Δ	0.2	PSI	Effluent Pressure Δ	1,4	PSI
Injection Well 1 - Water Column	62.2	FT	Injection Well 2 - Water Colum	-11.6	FT
Blower Pressure	2.5	"H2O	*Injec	tion Well 2 (No Transdu	icer)

GET SYSTEM MEASUREMENTS IN THE GET WATER ROOM:

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water Room South Manifold, wells listed South to North		GET Water Room North Manifold, wells listed South to North	
RW-5	10214933	RW-7	137028734
RW-8	230003120	RW-6	205423584
RW-3	8096627	RW-1	7287410
RW-4	14611043	RW-2	13472193

GET SYSTEM MEASUREMENTS IN THE GET WATER ROOM (Continued):

AG FILER PROCES	SS MEASUREMENTS:		
Location	Reading	Location	Reading
Influent Filter Skid (w	vest side)		
North Filter Housing			
Top Gauge	PSI: 22	Side Gauge	PSI: 16
Pressure Δ (Side PSI-T			PSI:
South Filter Housing			
Top Gauge	PSI: 20	Side Gauge	PSI: 22
Pressure Δ (Side PSI-T	op PSI)		PSI: 2
Effluent Filter Skid (e	ast side)		·
East Filter Housing	4-1		
Top Gauge	PSI: O	Side Gauge	PSI:
Pressure Δ (Side PSI-T	op PSI)		PSI: 👌
West Filter Housing			
Top Gauge	PSI:	Side Gauge	PSI: O
	Top PSI)		PSI: O

OPERATIONS AND MAINTENANCE REPORT FORM GARVEY ELEVATOR SITE, LTRA Task Order

DATE: 3/20/23	TIME: 930- 1100
OPERATOR: 🔀	OPERATOR ON SITE: 1.5 Hours
WEATHER: SUNNY 40°	- Tixing Computer
WEATHER: Sunny 40° PPE: Hard Hat, Safty vest, Steel	Ltoes
DAILY CHECKLIST:	
Vandalism/Damage to Site/Building Exterior: _	None
Vandalism/Damage to Process Area: _ <u>ルo〜</u>	
Vandalism/Damage to Wells:	
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0
	SVE 2: 8990.5
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0
	SVE 2: 8990.5
Hours of Downtime:	
MAINTENANCE ACTIVITIES/OBSER\	/ATIONS/COMMENTS:
SVE-1 98838.5	Hrs.; "H2O
SVE-2 9 823,9	Hrs.; "H2O
Comments	

SYSTEM MEASUREMENTS (To be recorded weekly and with any sampling event)

SVE 1 (SHALLOW) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacuum: IN. H2O			Flow:	NA	
Dilution Dar	nper: 100)% Open	Recycle Line:	0%	Open
Knockout T	ank: 0.9	6 Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H2O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior Sou North	th Manifold, wells	s listed South to	Outside Manifo	old, Well listed	East to West
SVE-4		-	SVE-5		
SVE-8		<u></u>	SVE-6		-
SVE-1		-	SVE-2		
SVE-7R)-)	SVE-12		
SVE-3		-	Reserved	-	

SVE 2 (DEEP) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacu	um:	IN. H2O	Flow:	NA	
Dilution Dam	nper: 100	% Open	Recycle Line:	0%	Open
Knockout Ta	nk: 0 %	6 Full	Temp:	NA	°F
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H₂O)
Interior Sout North	h Manifold, wells	listed South to	Outside Man	ifold, Well listed	East to West
SVE-11		-	Reserved		-
SVE-10 or SVE-13			Reserved	-	
SVE-9		-	Reserved	-	-

COMBINED FLOW FOR SVE SYSTEM 1 & 2:	Currently off EPA Request	CFM
COMMENTS		
SVE-1 & SVE-2 Currently off due to EPA Request.		

GROUNDWATER EXTRACTION AND TREATMENT (GET) SYSTEM MEASUREMENTS AT THE PLC SCREEN:

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)
RW-1	2.9	2,9	59.4	Z. 4
RW-2	7.0	7.0	56.4	2,3
RW-3	4.1	4.1	46.5	3.6
RW-4	6.7	(0.7	54.1	1.0
RW-5	3.2	3.2	58.1	0.9
RW-6	90	90	54.1	10.7
RW-7	58	50	52.7	2.4
RW-8	100	100	59.Z	12.1
Total Flow Rate	-	271.9	-	-
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)
Effluent Pump	6.0	144.1	25.4	6.0

Location	Reading		Location	Reading	
Influent Pressure	19.9	PSI	Effluent Pressure	-1.1	PSI
Influent Pressure Δ	0.2	PSI	Effluent Pressure Δ	1.3	PSI
Injection Well 1 - Water Column	62.0	FT	Injection Well 2 - Water Colum	-11.4	FT
Blower Pressure	2.5	"H2O	*Injec	tion Well 2 (No Tra	nsducer)

GET SYSTEM MEASUREMENTS IN THE GET WATER ROOM:

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water Room South Manifold, wells listed South to North		GET Water Room North Manifold, wells listed South to North	
RW-5	10242141	RW-7	137518416
RW-8	230857248	RW-6	206391824
RW-3	8107436	RW-1	7 312174
RW-4	14646127	RW-2	13532072

GET SYSTEM MEASUREMENTS IN THE GET WATER ROOM (Continued):

otal flow through sti	ripper system:	271.	gpm_
tripper tower magne	ehilic reading:	1,8	"H2C
AG FILER PROCI	ESS MEASUREMENT	S:	
Location	Reading	Location	Reading
Influent Filter Skid (west side)		
North Filter Housing	,		
Top Gauge	PSI: 22	Side Gauge	PSI: /Co
Pressure Δ (Side PSI-			PSI: Co
South Filter Housing	5		
Top Gauge	PSI: 20	Side Gauge	PSI: 22
Pressure Δ (Side PSI	-Top PSI)		PSI: 2
Effluent Filter Skid (east side)		-
East Filter Housing			
Top Gauge	PSI: O	Side Gauge	PSI: o
Pressure Δ (Side PSI	-Top PSI)		PSI: O
West Filter Housing			
Top Gauge	PSI: D	Side Gauge	PSI: O
	-Top PSI)		PSI: O

OPERATIONS AND MAINTENANCE REPORT FORM GARVEY ELEVATOR SITE, LTRA Task Order

DATE: 03/27 /2023	TIME: 12:45 - 2:30
OPERATOR: CODY Louter	<u> </u>
WEATHER: 31, Sunny	Q , 5 hrs none pouting, searched for
PPE: Yes	remediation thed of consister Ward
DAILY CHECKLIST:	
Vandalism/Damage to Site/Building Exterior: _	NA
Vandalism/Damage to Process Area: NA	
Hours of Operation Since Last Oil Change:	SVE 1: 98005.0
	SVE 2: 8990.5
Hour of Operation Since Last Blower Lube:	SVE 1: 98005.0
	SVE 2: 8990.5
Hours of Downtime:	
MAINTENANCE ACTIVITIES/OBSER\	/ATIONS/COMMENTS:
SVE-1 988385	
SVE-2 9823.9	Hrs.; "H2O
Comments	

SYSTEM MEASUREMENTS (To be recorded weekly and with any sampling event)

SVE 1 (SHALLOW) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacu	uum:	IN. H2O	Flow:	NA	
Dilution Damper: 100% Open		Recycle Line: 0% Open			
Knockout Tank: 0 % Full		Temp: NA °F			
Location	Flow (CFM)	Vacuum (In. H ₂ Q)	Location	Flow (CFM)	Vacuum (In. H ₂ O)
Interior Sou North	th Manifold, wells	s listed South to	Outside Man	ifold, Well listed	East to West
SVE-4		/-	SVE-5		-
SVE-8	/	-	SVE-6		-
SVE-1			SVE-2		-
SVE-7R			SVE-12		-
SVE-3		-	Reserved	1 2	7-

SVE 2 (DEEP) PROCESS MEASUREMENTS: Currently Off EPA Request

System Vacuum: IN. H2O			Flow: NA				
Dilution Dar	nper: 100)% Open	Recycle Line: 0% Open				
Knockout Tank: 0 % Full		Temp: NA °F					
Location	Flow (CFM)	Vacuum (In. H ₂ O)	Location	Flow (CFM)	Vacuum (In. H ₂ O)		
Interior Sou North	th Manifold, well	s listed South to	Outside Manif	old, Well listed	East to West		
SVE-11			Reserved	-			
SVE-10 or SVE-13		-	Reserved	-	-		
SVE-9		-	Reserved	-	-		

COMBINED FLOW FOR SVE SYSTEM 1 & 2:	Currently off EPA Request	CFM
COMMENTS		
SVE-1 & SVE-2 Currently off due to EPA Request.		

GROUNDWATER EXTRACTION AND TREATMENT (GET) SYSTEM MEASUREMENTS AT THE PLC SCREEN:

Location	Flow Rate Set Point (GPM)	Flow Rate (GPM)	VFD Speed (HZ)	Water Column (FT)	
RW-1	2.9	2.9	59.4	2.2	
RW-2	7.0	7.0 56.3		2.2	
RW-3	4.1 4.1 46.4		1,9		
RW-4 6.6		6.6	54.0	0.9	
RW-5 3.\		3.1	58.0	1.1	
RW-6	90	90	54.1	10.6	
RW-7	57	57	52.7	2.3	
RW-8	100	100	59.9	12.0	
Total Flow Rate	-	270.70	-	-	
	Stripper Tower Set Point (FT)	Total Flow (GPM)	VFD Speed (HZ)	Stripper Tower Level (FT)	
Effluent Pump	6.0	148.8	25.6	6.0	

Location	Reading		Location	Reading	
Influent Pressure	19.8	PSI	Effluent Pressure	0.1	PSI
Influent Pressure Δ	0. 196	PSI	Effluent Pressure Δ	+1.2	PSI
Injection Well 1 - Water Column	62.3	FT	Injection Well 2 - Water Colum	-11.6	FT
Blower Pressure	2.5	"H2O	*Injec	tion Well 2 (No Trans	sducer)

GET SYSTEM MEASUREMENTS IN THE GET WATER ROOM:

Location	Total Flow (gallons)	Location	Total Flow (gallons)
GET Water Room South Manifold, wells listed South to North		GET Water Room North Manifold, wells South to North	
RW-5	10274304	RW-7	138106320
RW-8	231861472	RW-6	207312929
RW-3	8149391	RW-1	7341863
RW-4	14732825	RW-2	13603857

GET SYSTEM MEASUREMENTS IN THE GET WATER ROOM (Continued):

AG FILER PROCES	S MEASUREMENTS	:	
Location	Reading	Location	Reading
nfluent Filter Skid (we	est side)		
North Filter Housing			
Гор Gauge	PSI: 2.0	Side Gauge	PSI: 22
Pressure Δ (Side PSI-To	pp PSI)		PSI: 2
South Filter Housing			
Гор Gauge	PSI: 26	Side Gauge	PSI: 16
Pressure Δ (Side PSI-To	pp PSI)		PSI: 10
Effluent Filter Skid (ea	st side)	4	
East Filter Housing			
Гор Gauge	PSI: Q	Side Gauge	PSI: (2)
Pressure Δ (Side PSI-To	p PSI)		PSI: 🔾
West Filter Housing			
Top Gauge	PSI: Q	Side Gauge	PSI: O
	op PSI)		PSI: O
Top Gauge	(Side Gauge	201

Attachment 3a: EPA Region 7 Laboratory Analytical Report for WO 2300072



v. 1.12



United States Environmental Protection Agency Region 7 300 Minnesota Avenue Kansas City, KS 66101

Date: 04/05/2023

Subject: Transmittal of Sample Analysis Results for WO#: 2300072

Project ID: APA72Z01

Project: Garvey Elevator - Quarterly GW AP

From: Samuel R. Porter, Acting Chief

Laboratory Technology & Analysis Branch for M. Gunsalus

Laboratory Services and Applied Sciences Division

To: Angela Puls

R7 Superfund and Emergency Management

SEMD/REMB/SRES

Enclosed are the analytical data for the above-referenced Work Order[s] (WO) and Project. These results are based on samples as received at the Science and Technology Center. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please ensure that you file this electronic transmittal in your records management system. The Regional Laboratory will retain all the original documentation (e.g. COC[s], supporting files, etc.) according to our LSASD records management system. Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. The process of disposing of the samples for this WO will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Online Sample/Data Disposition and Customer Survey.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295 or email R7_STC_Helpline@epa.gov.

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United States Environmental Protection Agency Region 7 300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:
SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Summary Information for the Project in this Report

Project Manager: Angela Puls Organization: SEMD/REMB/SRES

Project ID: APA72Z01

Project Description: Garvey Elevator - Quarterly GW AP

Location: Hastings State: Nebraska Program: BIL Superfund RA/LTRA

Site Name: GARVEY ELEVATOR

 Site ID: A72Z
 Site OU: 01
 GPRA Code: 000DD2

Purpose: BIL Superfund RA/LTRA QAPP Number:

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
2300072-01	RW-1	Water	03/06/2023 08:55	03/09/2023
2300072-02	RW-2	Water	03/06/2023 09:10	03/09/2023
2300072-03	RW-3	Water	03/06/2023 09:15	03/09/2023
2300072-04	RW-4	Water	03/06/2023 09:20	03/09/2023
2300072-05	RW-5	Water	03/06/2023 09:25	03/09/2023
2300072-06	RW-6	Water	03/06/2023 09:30	03/09/2023
2300072-07	RW-7	Water	03/06/2023 09:35	03/09/2023
2300072-08	RW-8	Water	03/06/2023 09:40	03/09/2023
2300072-09	Influent	Water	03/06/2023 09:45	03/09/2023
2300072-10	Dup (Influent)	Water	03/06/2023 09:45	03/09/2023
2300072-11	Effluent	Water	03/06/2023 09:50	03/09/2023
2300072-12	MW-31A	Water	03/07/2023 12:05	03/09/2023
2300072-13	MW-30A	Water	03/07/2023 12:50	03/09/2023
2300072-14	MW-20A	Water	03/07/2023 15:30	03/09/2023
2300072-15	MW-19A	Water	03/07/2023 16:20	03/09/2023
2300072-16	MW-48B	Water	03/08/2023 07:45	03/09/2023
2300072-17	MW-51B	Water	03/08/2023 07:57	03/09/2023
2300072-18	MW-6A	Water	03/08/2023 08:09	03/09/2023
2300072-19	MW-3B	Water	03/08/2023 08:19	03/09/2023
2300072-20	MW-49B	Water	03/08/2023 08:25	03/09/2023
2300072-21	MW-47B	Water	03/08/2023 08:34	03/09/2023
2300072-22	MW-50B	Water	03/08/2023 08:43	03/09/2023
2300072-23	MW-4B	Water	03/08/2023 08:52	03/09/2023
2300072-24	Dup (MW-4B)	Water	03/08/2023 08:52	03/09/2023
2300072-25	MW-5A	Water	03/08/2023 09:13	03/09/2023
2300072-26	MW-5B	Water	03/08/2023 09:22	03/09/2023
2300072-27	Trip Blank	Water	03/08/2023 10:06	03/09/2023
2300072-28	Equipment Blank	Water	03/08/2023 10:33	03/09/2023

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

Lab ID: 2300072-01

Sample ID: RW-1 Matrix: Water Sampled: 03/06/23 08:55

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-02

Sample ID: RW-2 Matrix: Water Sampled: 03/06/23 09:10

		Qualifiers/			Date	
Analyte	Result	Comments	MDL / RL	Units	Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	10		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-03

Sample ID: RW-3 Matrix: Water Sampled: 03/06/23 09:15

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	19		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-04

Sample ID: RW-4 Matrix: Water Sampled: 03/06/23 09:20

		Qualifiers/	14D1 / D1		Date	
Analyte	Result	Comments	MDL / RL	Units	Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	8.0		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-05

Sample ID: RW-5 Matrix: Water Sampled: 03/06/23 09:25

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	1.1		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-06

Sample ID: RW-6 Matrix: Water Sampled: 03/06/23 09:30

Anthr	Danish	Qualifiers/	MDI / DI	l la ita	Date	Makad
Analyte	Result	Comments	MDL / RL	Units	Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	3.2		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-07

Sample ID: RW-7 Matrix: Water Sampled: 03/06/23 09:35

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	21		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls

WO#: 2300072 R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-08

Sample ID: 03/06/23 09:40 RW-8 Matrix: Sampled: Water

	D th	Qualifiers/	MDI / DI	11-2-	Date	Markad
Analyte	Result	Comments	MDL / RL	Units	Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	6.2		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-09

Sample ID: Influent Matrix: Water Sampled: 03/06/23 09:45

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	8.6		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls

WO#: 2300072Project ID: APA72Z01

R7 Superfund and Emergency Management SEMD/REMB/SRES

Project: Garvey Elevator - Quarterly GW AP

Reported: 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-10

Sample ID: Dup (Influent) Matrix: Water Sampled: 03/06/23 09:45

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	8.6		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-11

Sample ID: Effluent Matrix: Water Sampled: 03/06/23 09:50

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-12

Sample ID: MW-31A Matrix: Water Sampled: 03/07/23 12:05

		Qualifican/			Data	
Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	4.2		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	4.4		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-13

Sample ID: MW-30A Matrix: Water Sampled: 03/07/23 12:50

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	27		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-14

Sample ID: MW-20A Matrix: Water Sampled: 03/07/23 15:30

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-15

Sample ID: MW-19A Matrix: Water Sampled: 03/07/23 16:20

		Qualifiers/	14D1 / D1		Date	
Analyte	Result	Comments	MDL / RL	Units	Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	5.3		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-16

Sample ID: MW-48B Matrix: Water Sampled: 03/08/23 07:45

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	140		10	ug/L	03/13/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-17

Sample ID: MW-51B Matrix: Water Sampled: 03/08/23 07:57

		Qualifiers/			Date	
Analyte	Result	Comments	MDL / RL	Units	Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	3.3		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	490		100	ug/L	03/13/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-18

Sample ID: MW-6A Matrix: Water Sampled: 03/08/23 08:09

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	1.4		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-19

Sample ID: MW-3B Matrix: Water Sampled: 03/08/23 08:19

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	53		10	ug/L	03/13/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-20

Sample ID: MW-49B Matrix: Water Sampled: 03/08/23 08:25

Analda	Doguit	Qualifiers/	MDI / DI	l laiba	Date	Mathed
Analyte	Result	Comments	MDL / RL	Units	Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	3.3		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls

WO#: 2300072 R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-21

Sample ID: MW-47B 03/08/23 08:34 Matrix: Sampled: Water

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	1.9		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-22

Sample ID: MW-50B Matrix: Water Sampled: 03/08/23 08:43

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS	Kadit	COMMITTEE IN COMMI	TIDE, ILE	O.II.C	, ilidiy 200	VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	59		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-23

Sample ID: MW-4B Matrix: Water Sampled: 03/08/23 08:52

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	74		10	ug/L	03/13/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/10/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-24

Sample ID: Dup (MW-4B) Matrix: Water Sampled: 03/08/23 08:52

		Qualifiers/			Date	
Analyte	Result	Comments	MDL / RL	Units	Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	74		10	ug/L	03/13/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-25

Sample ID: MW-5A Matrix: Water Sampled: 03/08/23 09:13

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	4.2		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-26

Sample ID: MW-5B Matrix: Water Sampled: 03/08/23 09:22

		Qualifiers/			Date	
Analyte	Result	Comments	MDL / RL	Units	Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	42		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls

WO#: 2300072Project ID: APA72Z01

R7 Superfund and Emergency Management SEMD/REMB/SRES

Project: Garvey Elevator - Quarterly GW AP

Reported: 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-27

Sample ID: Trip Blank Matrix: Water Sampled: 03/08/23 10:06

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Sample Results

(Continued)

Lab ID: 2300072-28

Sample ID: Equipment Blank Matrix: Water Sampled: 03/08/23 10:33

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method
Volatile Organic Compounds by GCMS						VOC 3230.13
Chloroform	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Carbon Tetrachloride	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Trichloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624
Tetrachloroethene	ND		1.0	ug/L	03/11/2023	SW-846 Method 8260 / EPA-624

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls W0#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:
SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Certified Analyses included in this Report

Analyte	CAS #	Certifications	
SW-846 Method 8260 / EPA-624 in Water			VOC 3230.13
Chloroform	67-66-3	ISO	
Carbon Tetrachloride	56-23-5	ISO	
Trichloroethene	79-01-6	ISO	
Tetrachloroethene	127-18-4	ISO	

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls

R7 Superfund and Emergency Management

Project ID: APA72Z01

SEMD/REMB/SRES

Project: Garvey Elevator - Quarterly GW AP

04/05/2023 15:15

List of Certifications

Code	Description	Number	Expires
ISO Mobile	ISO/IEC 17025:2017 - Environmental Testing	L22-243	05/31/2024
ISO	ISO/IEC 17025:2017 - Environmental Testing	L22-243	05/31/2024

300 Minnesota Avenue Kansas City, KS 66101

 Angela Puls
 W0#:
 2300072

 R7 Superfund and Emergency Management
 Project ID:
 APA72Z01
 Reported:

 SEMD/REMB/SRES
 Project:
 Garvey Elevator - Quarterly GW AP
 04/05/2023
 15:15

Explanation of Qualifiers used on this report

<u>Item</u>	<u>Definition</u>
Dry	Sample results reported on a dry weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported: SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Explanation of Units used on this report

Units	Description
%	Percent
[blank]	
boat	Milestone boat
Deg C	Degrees Celcius
g	Grams
g/min	Gallons per Minute
m2	Square Meters
mg	Milligrams
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
mL	Milliliters
mL/L/hr	Milliliters per Liter per Hour
mm	Millimeters
mm/sec	Millimeters per second
MPN/100mL	Most Probable Number per One Hundred Milliliters
mV	Millivolts
ng	Nanograms
ng/kg	Nanograms per Kilogram
ng/L	Nanograms per Liter
NTU	Nephelometric Turbidity Unit
P/A	Presence/Absence
pg/cm2	Picograms per Square Centimeter
pg/L	Picograms per Liter
pg/m3	Picograms per Cubic Meter
SU	Standard Unit
ug/cm2	Micrograms per Square Centimeter
ug/kg	Micrograms per Kilogram
ug/L	Micrograms per Liter
ug/m2	Micrograms per Square Meter
ug/m3	Micrograms per Cubic Meter
ug/mL	Micrograms per Milliliter
uL	Microliters
umhos/cm	Micromhos per Centimeter
umoles/g	Micromoles per Gram
uS/cm	Microsiemens per Centimeter

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300072

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly GW AP 04/05/2023 15:15

Items for Project Manager Review

<u>LabNumber</u>	Analysis	Analyte	Exception
			Default Report (not modified)
			VERSION 6,22:1009
	VOC 3230,13	(Water)	H-Flags used
2300072-26	VOC 3230,13	Carbon Tetrachloride	MSB-05: Matrix Spiked and Matrix Spike Duplicate were spiked at a concentration significantly lower than the concentration found in the original sample. Spike recoveries were not used to evaluate data quality.
B23C034-MS2	VOC 3230.13	Carbon Tetrachloride	Exceeds lower control limit
B23C034-MS2	VOC 3230.13	Carbon Tetrachloride	MSB-05: Matrix Spiked and Matrix Spike Duplicate were spiked at a concentration significantly lower than the concentration found in the original sample. Spike recoveries were not used to evaluate data quality.
B23C034-MSD2	VOC 3230.13	Carbon Tetrachloride	Exceeds lower control limit
B23C034-MSD2	VOC 3230.13	Carbon Tetrachloride	MSB-05: Matrix Spiked and Matrix Spike Duplicate were spiked at a concentration significantly lower than the concentration found in the original sample. Spike recoveries were not used to evaluate data quality.

CHAIN OF CUSTODY RECORD ENVIRONMENTAL PROTECTION AGENCY REGION VII

				Garvey Elevator - 1st Quarter CONTENTS OF SHIPMENT							DATE OF SAM	PLE COLLECTION 202		COC PAGE
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CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION V

epa project manager Angela Puls	(Print)		SITE OR	SAMPLING EVE Ey Elevator	π			EUR	URI V	D	DATE OF SAMPLE COLLECTION(S) COC PAGE 3 6-8 2023 2 of 2
				CONTENTS	OF SHIPMI	ENT					
WORK ORDER (WO) AND SAMPLE NUMBER (e.g. 2200058-01)	1 L.PLANTIC BOTTLE	CAMSTER	THE OF CONTAIN	BOTTLE SAMPLE MANDER	VOA SET D VIALS EA)	MATER.	0	MC WESTE	DE DA	omer	RECEIVING LABORATORY REMARKS OTHER REPORTATION (condition of assignment upon receipt, other nample numbers, etc.)
2300072-25		were safe) on a	AN IAMIDAN FOR	GALL CE MARKET	1	1		<u> - </u>			Other serriges reduced to over)
2300072-26					3	V					Triple Volume, MS/MSD
2300072-27					1	1			Н		Trip Blank
2300072-28					1	7			Н		Equipment Blank
2500072 20					-				Н		
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											Cooler hand-delivered to the STC with
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Attachment 3b: EPA Region 7 Laboratory Analytical Report for WO 2300073



v. 1.12



United States Environmental Protection Agency Region 7 300 Minnesota Avenue Kansas City, KS 66101

Date: 03/21/2023

Subject: Transmittal of Sample Analysis Results for WO#: 2300073

Project ID: APA72Z01

Project: Garvey Elevator - Quarterly SVE Vapor AP

From: Samuel R. Porter, Acting Chief

Laboratory Technology & Analysis Branch

Laboratory Services and Applied Sciences Division

To: Angela Puls

R7 Superfund and Emergency Management

SEMD/REMB/SRES

Enclosed are the analytical data for the above-referenced Work Order[s] (WO) and Project. These results are based on samples as received at the Science and Technology Center. The Regional Laboratory has reviewed and verified the results in accordance with procedures described in our Quality Manual (QM). In addition to all of the analytical results, this transmittal contains pertinent information that may have influenced the reported results and documents any deviations from the established requirements of the QM.

Please ensure that you file this electronic transmittal in your records management system. The Regional Laboratory will retain all the original documentation (e.g. COC[s], supporting files, etc.) according to our LSASD records management system. Please contact us within 14 days of receipt of this package if you determine there is a need for any changes. The process of disposing of the samples for this WO will be initiated 30 days from the date of this transmittal unless an alternate release date is specified on the Online Sample/Data Disposition and Customer Survey.

If you have any questions or concerns relating to this data package, contact our customer service line at 913-551-5295 or email R7_STC_Helpline@epa.gov.

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Units and Definitions	18
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Chain of Custody PDF	20

United States Environmental Protection Agency Region 7 300 Minnesota Avenue Kansas City, KS 66101

WO#: 2300073 Angela Puls

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported: SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Summary Information for the Project in this Report

Project Manager: Angela Puls Organization: SEMD/REMB/SRES

Project ID: APA72Z01

Project Description: Garvey Elevator - Quarterly SVE Vapor AP

Location: Hastings State: Nebraska **Program:** BIL Superfund RA/LTRA

Site Name: GARVEY ELEVATOR

Site ID: A72Z Site OU: 01 GPRA Code: 000DD2

Purpose: BIL Superfund RA/LTRA **QAPP Number:**

Samples in this Report

Lab ID	Sample	Matrix	Date Sampled	Date Received
2300073-01	SVE-3	Air	03/07/2023 08:28	03/09/2023
2300073-02	SVE-4	Air	03/07/2023 08:31	03/09/2023
2300073-03	SVE-7R	Air	03/07/2023 08:36	03/09/2023
2300073-04	SVE-8	Air	03/07/2023 08:38	03/09/2023
2300073-05	SVE-9	Air	03/07/2023 08:41	03/09/2023
2300073-06	SVE-10	Air	03/07/2023 08:44	03/09/2023
2300073-07	SVE-11	Air	03/07/2023 08:47	03/09/2023
2300073-08	SVE-12	Air	03/07/2023 08:50	03/09/2023
2300073-09	Effluent	Air	03/07/2023 09:00	03/09/2023
2300073-10	Field Dup (Effluent)	Air	03/07/2023 09:00	03/09/2023

Additional Sample Information

Results as provided by the field sampler. No significant figure rules applied.

	CANISTER ID	STARTING PRESSURE	ENDING PRESSURE
Lab ID		(inHg)	(inHg)
2300073-01	697	27.5	1.5
2300073-02	857	27.5	2.5
2300073-03	810	27.5	1.5
2300073-04	895	27.5	1.5
2300073-05	930	27.5	0.5
2300073-06	918	27.5	0.5
2300073-07	601	27.5	3.5
2300073-08	602	27.5	4
2300073-09	896	27.5	4
2300073-10	707	26.5	2

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls W0#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:
SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Analysis Case Narrative

Air Volatiles

Chloroform was UJ-coded in samples 09 and 10. This analyte was not found in the samples at or above the reporting limit, however, the reporting limit is an estimate (UJ-coded) due to low recovery (84.1%, lower limit 85%) of this analyte in the laboratory control sample. The actual reporting limit for this analyte may be higher than the reported value.

Chloroform was J-coded in samples 01 - 08. Although the analyte in question has been positively identified in the samples, the quantitation is an estimate (J-coded) due to low recovery (84.1%, lower limit 85%) of this analyte in the laboratory control sample. The actual concentration for this analyte may be higher than the reported value.

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls **WO#: 2300073**

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

Lab ID: 2300073-01

Sample ID: SVE-3 Matrix: Air Sampled: 03/07/23 08:28

Analyte	Qualifiers/ Result Comments	MDL / RL	Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS						VOC 3230.04
Chloroform	0.85 J	0.12	ug/m3	03/13/2023	TO-15	
Carbon Tetrachloride	41	0.32	ug/m3	03/13/2023	TO-15	
Tetrachloroethene	0.38	0.34	ug/m3	03/13/2023	TO-15	

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

(Continued)

Lab ID: 2300073-02

Sample ID: SVE-4 Matrix: Air Sampled: 03/07/23 08:31

Analyte	-	ualifiers/ omments	MDL / RL	Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS							VOC 3230.04
Chloroform	1.6 J		0.12	ug/m3	03/13/2023	TO-15	
Carbon Tetrachloride	85		0.32	ug/m3	03/13/2023	TO-15	
Tetrachloroethene	0.80		0.34	ug/m3	03/13/2023	TO-15	

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Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

(Continued)

Lab ID: 2300073-03

Sample ID: SVE-7R Matrix: Air Sampled: 03/07/23 08:36

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS							VOC 3230.04
Chloroform	35 J	ı	0.12	ug/m3	03/14/2023	TO-15	
Carbon Tetrachloride	21000		64	ug/m3	03/14/2023	TO-15	
Tetrachloroethene	32		0.34	ug/m3	03/14/2023	TO-15	

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Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

(Continued)

Lab ID: 2300073-04

Sample ID: SVE-8 Matrix: Air Sampled: 03/07/23 08:38

Analyte	Result	Qualifiers/ Comments	MDL / RL	Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS							VOC 3230.04
Chloroform	1.0 J		0.12	ug/m3	03/13/2023	TO-15	
Carbon Tetrachloride	71		0.32	ug/m3	03/13/2023	TO-15	
Tetrachloroethene	1.3		0.34	ug/m3	03/13/2023	TO-15	

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

(Continued)

Lab ID: 2300073-05

Sample ID: SVE-9 Matrix: Air Sampled: 03/07/23 08:41

Analyte	Qualifiers/ Result Comments	MDL / RL	Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS						VOC 3230.04
Chloroform	0.61 J	0.12	ug/m3	03/13/2023	TO-15	
Carbon Tetrachloride	300	3.2	ug/m3	03/14/2023	TO-15	
Tetrachloroethene	0.48	0.34	ug/m3	03/13/2023	TO-15	

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Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

(Continued)

Lab ID: 2300073-06

Sample ID: SVE-10 Matrix: Air Sampled: 03/07/23 08:44

Analyte	Qualifiers/ Result Comments	MDL / RL	Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS						VOC 3230.04
Chloroform	0.59 J	0.12	ug/m3	03/13/2023	TO-15	
Carbon Tetrachloride	310	3.2	ug/m3	03/14/2023	TO-15	
Tetrachloroethene	0.49	0.34	ug/m3	03/13/2023	TO-15	

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Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

(Continued)

Lab ID: 2300073-07

Sample ID: SVE-11 Matrix: Air Sampled: 03/07/23 08:47

Analyte	Qualifiers/ Result Comments		Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS						VOC 3230.04
Chloroform	0.62 J	0.12	ug/m3	03/13/2023	TO-15	
Carbon Tetrachloride	380	3.2	ug/m3	03/14/2023	TO-15	
Tetrachloroethene	0.61	0.34	ug/m3	03/13/2023	TO-15	

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

(Continued)

Lab ID: 2300073-08

Sample ID: SVE-12 Matrix: Air Sampled: 03/07/23 08:50

Analyte	Qualifiers/ Result Comments	MDL / RL	Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS						VOC 3230.04
Chloroform	0.12 J	0.12	ug/m3	03/14/2023	TO-15	
Carbon Tetrachloride	13	0.32	ug/m3	03/14/2023	TO-15	
Tetrachloroethene	ND	0.34	ug/m3	03/14/2023	TO-15	

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Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

(Continued)

Lab ID: 2300073-09

Sample ID: Effluent Matrix: Air Sampled: 03/07/23 09:00

Analyte	Qualifie Result Comme	•	Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS						VOC 3230.04
Chloroform	ND UJ	0.12	ug/m3	03/14/2023	TO-15	
Carbon Tetrachloride	1.2	0.32	ug/m3	03/14/2023	TO-15	
Tetrachloroethene	ND	0.34	ug/m3	03/14/2023	TO-15	

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Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Sample Results

(Continued)

Lab ID: 2300073-10

Sample ID: Field Dup (Effluent) Matrix: Air Sampled: 03/07/23 09:00

Analyte	Qualifiers/ Result Comments	MDL / RL	Units	Date Analyzed	Method	
Volatile Organic Compounds by GCMS						VOC 3230.04
Chloroform	ND UJ	0.12	ug/m3	03/14/2023	TO-15	
Carbon Tetrachloride	1.2	0.32	ug/m3	03/14/2023	TO-15	
Tetrachloroethene	ND	0.34	ug/m3	03/14/2023	TO-15	

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Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:
SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Certified Analyses included in this Report

Analyte	CAS #	Certifications	
TO-15 in Air			VOC 3230.04
Chloroform	67-66-3	ISO	
Carbon Tetrachloride	56-23-5	ISO	
Tetrachloroethene	127-18 -4	ISO	

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 RPOTECT Quarterly SVE Vapor AP 03/21/2023 11:38

List of Certifications

Code	Description	Number	Expires
ISO Mobile	ISO/IEC 17025:2017 - Environmental Testing	L22-243	05/31/2024
ISO	ISO/IEC 17025:2017 - Environmental Testing	L22-243	05/31/2024

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Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported:
SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Explanation of Qualifiers used on this report

<u>Item</u>	Definition
J	The identification of the analyte is acceptable, the reported value is an estimate.
UJ	The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.
Dry	Sample results reported on a dry weight basis.
ND	Analyte NOT DETECTED at or above the reporting limit.
RPD	Relative Percent Difference
%REC	Percent Recovery
Source	Sample that was matrix spiked or duplicated.

United States Environmental Protection Agency Region 7

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300073

R7 Superfund and Emergency Management Project ID: APA72Z01 Reported: 03/21/2023 11:38

SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP

Explanation of Units used on this report

Units	Description
%	Percent
[blank]	
boat	Milestone boat
Deg C	Degrees Celcius
g	Grams
g/min	Gallons per Minute
m2	Square Meters
mg	Milligrams
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
mL	Milliliters
mL/L/hr	Milliliters per Liter per Hour
mm	Millimeters
mm/sec	Millimeters per second
MPN/100mL	Most Probable Number per One Hundred Milliliters
mV	Millivolts
ng	Nanograms
ng/kg	Nanograms per Kilogram
ng/L	Nanograms per Liter
NTU	Nephelometric Turbidity Unit
P/A	Presence/Absence
pg/cm2	Picograms per Square Centimeter
pg/L	Picograms per Liter
pg/m3	Picograms per Cubic Meter
SU	Standard Unit
ug/cm2	Micrograms per Square Centimeter
ug/kg	Micrograms per Kilogram
ug/L	Micrograms per Liter
ug/m2	Micrograms per Square Meter
ug/m3	Micrograms per Cubic Meter
ug/mL	Micrograms per Milliliter
uL	Microliters
umhos/cm	Micromhos per Centimeter
umoles/g	Micromoles per Gram
uS/cm	Microsiemens per Centimeter

United States Environmental Protection Agency Region 7

300 Minnesota Avenue Kansas City, KS 66101

Angela Puls WO#: 2300073 R7 Superfund and Emergency Management

Project ID: APA72Z01 Reported: SEMD/REMB/SRES Project: Garvey Elevator - Quarterly SVE Vapor AP 03/21/2023 11:38

Items for Project Manager Review

LabNumber	Analysis	Analyte	Exception
			Default Report (not modified) VERSION 6.22:1009
2300073-01	VOC 3230,04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-02	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-03	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-04	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-05	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-06	VOC 3230,04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-07	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-08	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-09	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-09	VOC 3230.04	Chloroform	UJ: The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.
2300073-10	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
2300073-10	VOC 3230.04	Chloroform	UJ: The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.
B23C043-BLK1	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.
B23C043-BLK1	VOC 3230,04	Chloroform	UJ: The analyte was not detected at or above the reporting limit. The reporting limit is an estimate.
B23C043-BS1	VOC 3230.04	Chloroform	Exceeds lower control limit
B23C043-DUP1	VOC 3230.04	Chloroform	LCS-02: Laboratory Control Sample recovery was less than the established control limit.

CHAIN OF CUSTODY RECORD
ENVIRONMENTAL PROTECTION AGENCY REGION V

epa project manager Angela Puls	(Print)		SITE OR	SAMPLING EVE Ey Elevator	NT			· · ·		D	ATE OF SAM	PLE COLLECTION(8 7 2023 DAY YEAR	COC PAGE 1 of 1
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Attachment 4: Carbon Tetrachloride Trend Graphs



